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Study to Determine Residential Soiling Costs of Particulate Air Pollution

NATIONAL AIR POLLUTION CONTROL ADMINISTRATION
ENVIRONMENTAL HEALTH SERVICE
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Raleigh, North Carolina

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16. Abstracts

A final report is presented of a survey which was conducted in the Penjerdel area around Philadelphia, Pennsylvania, through the use of questionnaires, to determine if householders attitudes and behavior toward, and costs of residential cleaning and maintenance operations are affected by the annual level of air particulate matter under which they live. The report consists of six chapters which provide the following information: A summary and description of the methods employed; a summary of the major findings; a detailed description of the soiling cost method for 11 of the cleaning and maintenance operations and the costs computed; and a summary of other findings from personal interview questionnaires.

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Residential Soiling Costs
# of Particulate Air Pollution

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ENVIRONMENTAL HEALTH SERVICE
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Raleigh, North Carolina

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October 15, 1970

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1025 CONNECTICUT AVENUE, N.W.
WASHINGTON, D.C. · 20036
293-3600
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October 15, 1970

Mr. Louis Johnson
Economic Effects Research Division
Department of Health, Education, and Welfare
National Air Pollution Control Administration
1033 Wade Avenue
Raleigh, North Carolina 27605

Dear Mr. Johnson:

One hundred copies of our final report for Contract No. CPA 22-69-103 are transmitted with this letter. The contract was for a study to Determine Residential Soiling Costs of Particulate Air Pollution. The PENJERDEL area around Philadelphia, Pennsylvania was used as the data-gathering area, largely through the use of personally administered questionnaires, to determine if householders attitudes and behavior toward and costs of residential cleaning and maintenance operations are affected by the annual level of air particulate matter under which they live.

The report documents the extreme care taken to determine the extent of the effects of air particulate level on householder behavior toward residential cleaning and maintenance operations, and hence the costs of these operations. Complex, sophisticated statistical survey research techniques were planned from the beginning of the project and employed during it because of our initial belief that many, perhaps more dominant, non-pollution variables explain differences in residential cleaning and maintenance operations to a far greater degree than the variations in annual air particulate level measurable in the PENJERDEL area. Therefore, our survey techniques included (1) a carefully developed area probability sample over the PENJERDEL area, (2) group-depth interviews leading to pre-estimates of attitudes toward cleaning and the best ways of phrasing survey questions, (3) personally administered questionnaires, rather than mail or telephone surveys, (4) a factor analysis of the questionnaire respondents in order to separate the population into attitude groups in the event some groups were more "sensitive" to air particulate level than others, (5) collection of considerable demographic data on each respondent and his residence, and (6) care taken to ensure high quality of the field interview staff, coding, and key punching operations.

This care taken in the designing, administering, and analyzing of the household survey has resulted in generally small enough statistical variances to be "confident" of the results. It has permitted us to cross-tabulate and analyze the respondents results by demographic variables, such as income and race, attitude segments, such as "do-it-yourself" and "dutiful cleaner," and homeowner variables, such as rent or own and length of residency at the house or apartment.

The overall finding over 27 cleaning and maintenance operations studied is that the range of annual air particulate levels experienced in the Philadelphia area (approximately 50 to 150 micrograms per cubic meter) has no measurable effect on out-of-pocket cleaning and maintenance costs for the residents of the over 1,500,000 households in the area. These operations included painting, dry cleaning, and washing operations. As a further simplification of the findings, primarily those operations connected with "looking outdoors" were increasing functions of air particulate level: inside and outside washing of windows, cleaning screens, etc. But data show these to be "low out-of-pocket cost" operations since very few residents contract this work out. In addition, residents of high pollution areas generally believed pollution effects on their cleaning and maintenance operations to be higher than that believed by residents of low pollution areas.

Even though air particulate levels do not affect out-of-pocket costs in the Philadelphia area, we have surveyed the unit costs of some of the 27 operations appearing in the questionnaire and have presented these results in the aggregate across the area. We have converted these cost results to estimates of annual costs per operation, such as exterior painting. The value of these data is that they are based on annual frequency data and do-it-yourself and contractor proportionalities coming from the carefully developed survey plan. Hence, these data are probably one of the better estimates of soiling costs for certain cleaning and maintenance operations in a large metropolitan area. For comparative purposes, we also present estimates for some tasks including imputed do-it-yourself labor costs.

In summary, we believe we have provided a sound, statistically justifiable set of findings on examples of operations that could be affected by air particulate level in a direct economic (cost) manner for a representative major metropolitan area. The essentially null-effect cost findings imply that health and aesthetic effects of air particulate level, difficult as they are to measure, will be required in order to quantify the impact of raising or lowering annual air particulate levels. Direct economic effects, as far as residential structures are concerned, appear unimportant.

The final report for this project is divided into six chapters and three appendixes. Chapter I is a background chapter. Chapter II is a summary of the methods employed. Chapter III summarizes the major findings. Chapter IV describes the survey research method in detail for anyone who wishes to go beyond Chapter II.

Chapter V consists of a detailed description of the soiling cost method for 11 of the cleaning and maintenance operations and the costs computed. Chapter VI summarizes other findings from the personal interview questionnaires, such as attitudes toward air pollution. Appendix A is a copy of the questionnaire itself and the factor analysis statements. Appendix B is a detailed tabular appendix of the questionnaire results. Appendix C is a presentation of procedures and findings of the factor segmentation.

We have undertaken in this final report to take account of each of the comments made by you and your staff in the review of the draft final report submitted to you in June, 1970.

It has been a pleasure to work with Dr. Donald Gillette and you on this project.

Very truly yours,

BOOZ, ALLEN & HAMILTON, INC.

NATIONAL ANALYSTS, INC.

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I. BACKGROUND AND PURPOSES

The background to this project and its purposes are summarized in this chapter in order to highlight (1) the importance of this project with regard to air pollution planning analysis, and (2) the necessity to develop a survey as sophisticated as the one developed and successfully administered to approximately 1,500 households throughout the 11-county Philadelphia area, stretching approximately from Wilmington, Delaware, to Trenton, New Jersey.

1. LARGE SUMS OF MONEY HAVE BEEN APPLIED TOWARD IMPROVING AIR POLLUTION ABATEMENT TECHNOLOGY

The National Air Pollution Control Administration and other organizations, both public and private, have devoted large sums of money, particularly in the past few years, toward improving air pollution abatement technology. The largest single share of funds disbursed by NAPCA on contracts is devoted to abatement technology, from systems analysis of specific industries, such as the integrated iron and steel industry, to pilot plant development and test, such as the evaluation of direct limestone-dolomite additive injection for sulphur dioxide control.

2. METEOROLOGICAL MODELS HAVE BEEN DEVELOPED TO SUPPORT THE PREDICTION OF GASEOUS AND AIR PARTICULATE CONCENTRATIONS

Diffusion and transport models, specifically for air pollution purposes, have been and are being developed in order to predict the effects of stationary source effluents and moving sources, such as highway vehicular activity. Combined with knowledge of specific sources and air sampling monitoring networks, these models and subsequent refinements will not only be able to be used for day-to-day operational purposes in an air quality region, but will be able to predict the effects of different abatement strategies. Therefore, combining the results of the abatement technology with the meteorological models will permit the prediction of the cost of producing a particular air pollution "contour" over an air quality region.

3. ABATEMENT COST AND BENEFIT COMPUTATIONS REQUIRE BENEFIT DATA

For planning purposes, the abatement cost information obtainable from abatement technology studies and data and the pollution level information, for given abatement strategies, attainable from the use of the meteorological models provide the information needed to define the cost of abatement, but reveal nothing about the "benefit" of the abatement strategy. A comprehensive cost and benefit analysis will require means of obtaining benefit data for selected definitions of benefit.

4. ESTIMATES-TO-DATE OF BENEFIT FROM ABATEMENT ARE LARGELY "INDIRECT" ESTIMATES

Benefit dimensions in the air pollution field include measurements related to chronic health problems, acute health problems, aesthetic effects, physical irritants, and related economic effects, such as higher corrosion rates of surface materials and more rapid soiling that may cause an increased frequency of performing an operation. Assuming measurement of the extent of health problems, for example, can be made, such as added disability days per year per person per unit of SO_2, converting this number to a dollar benefit is difficult, suspect, and at the heart of considerable controversy about the ability to use this type of dollar imputation in combination with dollar benefit estimates from other dimensions, such as aesthetic effects converted to dollars.

The estimates currently available to NAPCA are by-and-large of the "indirect" type. Therefore, the NAPCA has been searching for at least a subset of all the possible "damage" dimensions that are likely to be amenable to direct economic benefit. In other words, if an abatement strategy can be shown to cost the sources $100 million annually but will "save" a metropolitan area $200 million annually in known direct costs, a benefit of $200 million will accrue for a cost of $100 million, implying a worthwhile abatement strategy from the viewpoint of the entire metropolitan community. Health, aesthetic, and other difficult to convert-to-dollar dimensions would then add to the strength of the argument for such a strategy, either through imputed added dollar savings or as separate dimensions with estimates of the effect, for example, on a primary health variable.

5. RESIDENTIAL SOILING COSTS ARE GOOD CANDIDATES FOR DIRECT ECONOMIC BENEFIT MEASUREMENT

Soiling costs, dealing with the effects of air particulate matter rather than the effects of gaseous emissions, are one of the prime subsets for direct economic benefit measurement. There are many washing, other types of cleaning, and resurfacing operations about the home that can be directly surveyed to determine the frequency of performing the operation, the extent of the operation, and its cost.

Combined with some knowledge of the air particulate level in the neighborhoods of a region, the effects of air particulate matter on the behavior of residents with regard to certain representative cleaning and maintenance operations can be measured. Any measurements of differential behavior will define a minimum effect, since other operations not considered may increase the measured effect, and other dimensions--health, etc.--will provide additional impact to the assertion of the value of an abatement strategy.

6. ATTEMPTS TO MEASURE RESIDENTIAL SOILING COSTS AS A FUNCTION OF AIR PARTICULATE LEVEL HAVE BEEN OF LIMITED VALUE

During the 1960's, a few attempts were made to measure the effect of air particulate level on residential soiling costs.

In 1960, a comparative study was done by Michelson and Tourin on two small towns in the Upper Ohio Valley: Steubenville, Ohio, with an average air particulate level of 383 micrograms per cubic meter at that time, and Uniontown, Pennsylvania, with an average of 115. These towns of approximately 25,000 population were "paired" as best could be done in the valley so that most demographic factors were roughly equal, with Steubenville being much more industrial than Uniontown. Mailed questionnaires were sent out on a non-statistically derived sample of the population. Returns ranging from 2% to 6% of the total households in the communities were received, with approximately 30% response rate for questionnaires mailed out on three separate topic questionnaires: (1) inside maintenance of homes, (2) laundry and dry cleaning, and (3) outside maintenance of homes. Based on this non-statistical sampling, the added per capita cost for the Steubenville population, where the higher pollution level was more than three times that of Uniontown, was $84. (The study is described in Public Health Reports, Volume 81, No. 6, June 1966.)

Ronald G. Ridker, in his book, Economic Costs of Air Pollution, 1967, Frederick A. Praeger, discusses a 1965-1966 study in the Philadelphia area. The sample design was based on finding two areas in Philadelphia with demographic and other similarities, but with a known difference in air particulate level. The 1960-1965 monthly averages in the two areas, in micrograms per cubic meter, were 167 and 104. A questionnaire was developed and administered by interviewers on a straight random basis, however, only to white, female household residents, in the two brick row house neighborhoods. The results show no discernible differences in soiling frequency operations between the two neighborhoods in spite of an approximately 60% higher air particulate level in one of them compared to the other.

Another study was performed by Michelson in 1967 in the Washington, D. C., area. Three suburban areas were sampled, Fairfax, Rockville and Suitland, using mailed questionnaires.

The air particulate levels were 60, 68, and 85 micrograms per cubic meter respectively. The response rate was about 30%, which resulted in about 4,000 usable questionnaires. Even with the very low particulate levels and the small differences between them, Michelson obtained discernible increasing soiling costs with increasing particulate level. Since the ranges of air sampling instrument measurement error, averaging processes over a community, etc. could well be of the order of the differences being studied, there is almost no way of statistically defending the results of this survey.

The NAPCA, prior to deciding to fund the current project, had reservations that the three studies sketched above all lacked, individually and as a group, the statistical validity to form the basis even for the beginnings of the direct economic effects part of cost and benefit analyses. Among the various open questions were:

- Are we faced with a "small effect" situation perhaps masked by the additive effect of many other variables, largely behavioral and demographic?
- Can an area probability sample be accomplished within a reasonable budget so that extrapolations over an entire metropolitan area can be made?
- Won't the improved meteorological modeling be of use in defining the air particulate contours for an entire region?

- Can we include a large variation in annual air particulate level with a comprehensive statistically based survey sample?

7. THE PENJERDEL AREA IS BEING STUDIED COMPREHENSIVELY FROM A COST AND BENEFIT AND ABATEMENT STRATEGY STANDPOINT

The PENJERDEL area consists of 11 counties, more or less from Wilmington, Delaware, to Trenton, New Jersey (about 85 miles), along the Delaware River Valley, and about 45 miles on either side of the river. The center of the area is Philadelphia and Camden. The annual air particulate averages, denoted by contour isopleths defining four zones, are shown on Exhibit I, following this page.

This area is being studied comprehensively from a cost and benefit analysis viewpoint. The isopleth contours of Exhibit I are a result of source and air quality sample measurements combined with a meteorological model.

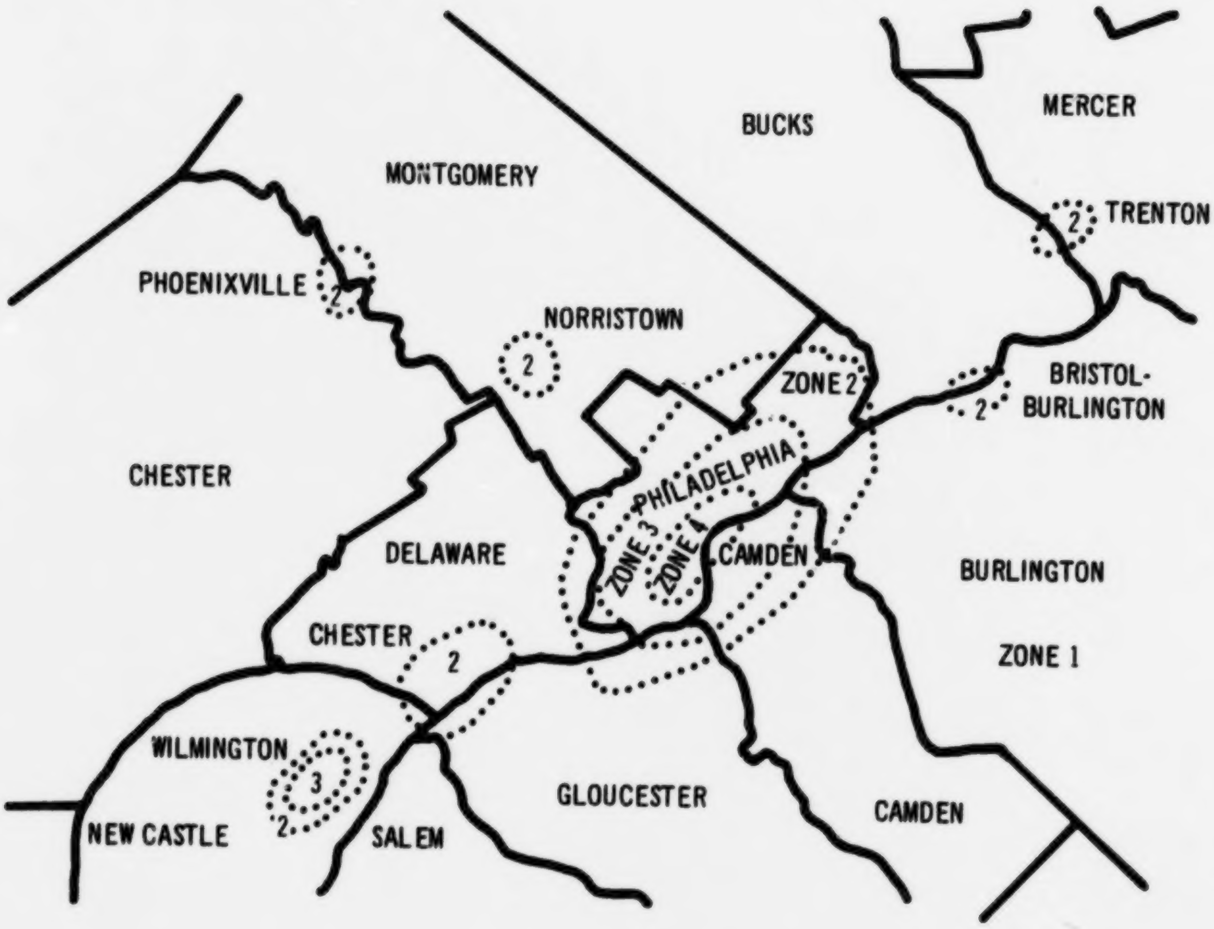
8. A CAREFULLY DEVELOPED RESIDENTIAL SOILING COST PROJECT FOR THE PENJERDEL AREA WAS DECIDED UPON

In order to avoid the gaps of the studies mentioned and to answer the questions in item 6 above, NAPCA decided to fund a project on residential soiling costs for the PENJERDEL area. The primary purpose of this project was to be a determination of current residential soiling costs in the PENJERDEL area

EXHIBIT I

National Air Pollution Control Administration

PENJERDEL AREA AND AIR PARTICULATE CONTOURS


BUCKS
MERCER
MONTGOMERY
TRENTON
2
PHOENIXVILLE
2
NORRISTOWN
2
ZONE 2
BRISTOL-BURLINGTON
2
CHESTER
PHILADELPHIA
ZONE 3
ZONE 1
CAMDEN
DELAWARE
BURLINGTON
ZONE 1
CHESTER
2
WILMINGTON
3
2
NEW CASTLE
SALEM
GLOUCESTER
CAMDEN

by pollution level. The results were to be used with the regional cost and benefit analysis as a main element of the current benefit part of the analysis.

A secondary purpose of the project was to provide a method of estimating residential soiling costs under the simulation of other abatement strategies in the PENJERDEL area. In other words, if the source levels in the PENJERDEL area were modified as a result of the added cost of abatement equipment, these actions would affect the air particulate levels in the area and show modifications in the isopleth map of Exhibit I. Then, what effect would these changes have on residential soiling costs? The need for this purpose assumes that at least some segment of the population, however defined, has its residential cleaning and maintenance behavior affected by air particulate level variations within the roughly 3 to 1 range noted in the PENJERDEL area.

Other purposes include comparison with previous work and the use of the survey results for other metropolitan areas. This latter purpose is also conditional on the discovery of behavioral variations with air particulate level.

II. SUMMARY OF METHODS EMPLOYED AND METHODS RESULTS TO DETERMINE RESIDENTIAL SOILING COSTS

In preparation for the summary of the major findings in the next chapter, this chapter summarizes the analytic methods employed. It also summarizes methods results, such as general comments about the statistical variance of the data collected, and the validity of cost estimates from householders. (See detailed data in Chapter III.)

1. AIR PARTICULATE LEVEL IS LIABLE TO BE ONLY ONE OF MANY FACTORS DETERMINING CLEANING AND MAINTENANCE OPERATIONS FREQUENCIES

As mentioned in the previous chapter under a general question, the effect of air particulate level is liable to be small relative to the sum of the effect of other variables, even for the three to one range of air particulate level in the PENJERDEL area. It is not difficult to assume the strong effect of habit, training, and other attitudinal conditioning on such common operations as washing and painting in household situations. Therefore, the survey method had to be designed to categorize individuals into many different classes, some of which (the attitudinal ones) would only become apparent as a result of the survey analysis itself.

Exhibit II, following this page, illustrates the possible need for segmenting the population by cleaning and maintenance attitudes. One segment may be quite sensitive to air particulate level, others not. Depending how these segments are dispersed throughout the metropolitan area, new isopleth contours as a result of various abatement strategies will affect residential soiling costs to different degrees. Without this population segmentation, larger variances might appear in the data and groups nonsensitive to air particulate matter could mask the behavior of sensitive groups.

2. THE PROJECT METHOD CONSISTED OF TWO MAJOR ACTIVITIES

The project method consisted of two main groups of activity. One main group permitted the determination of soiling cost operations independent of data gathered from the survey questionnaire since there was a good possibility that people would have difficulty answering cost and surface area questions for painting, washing, and the like. All other data were gathered in the other main group of activity which was associated with the survey questionnaire.

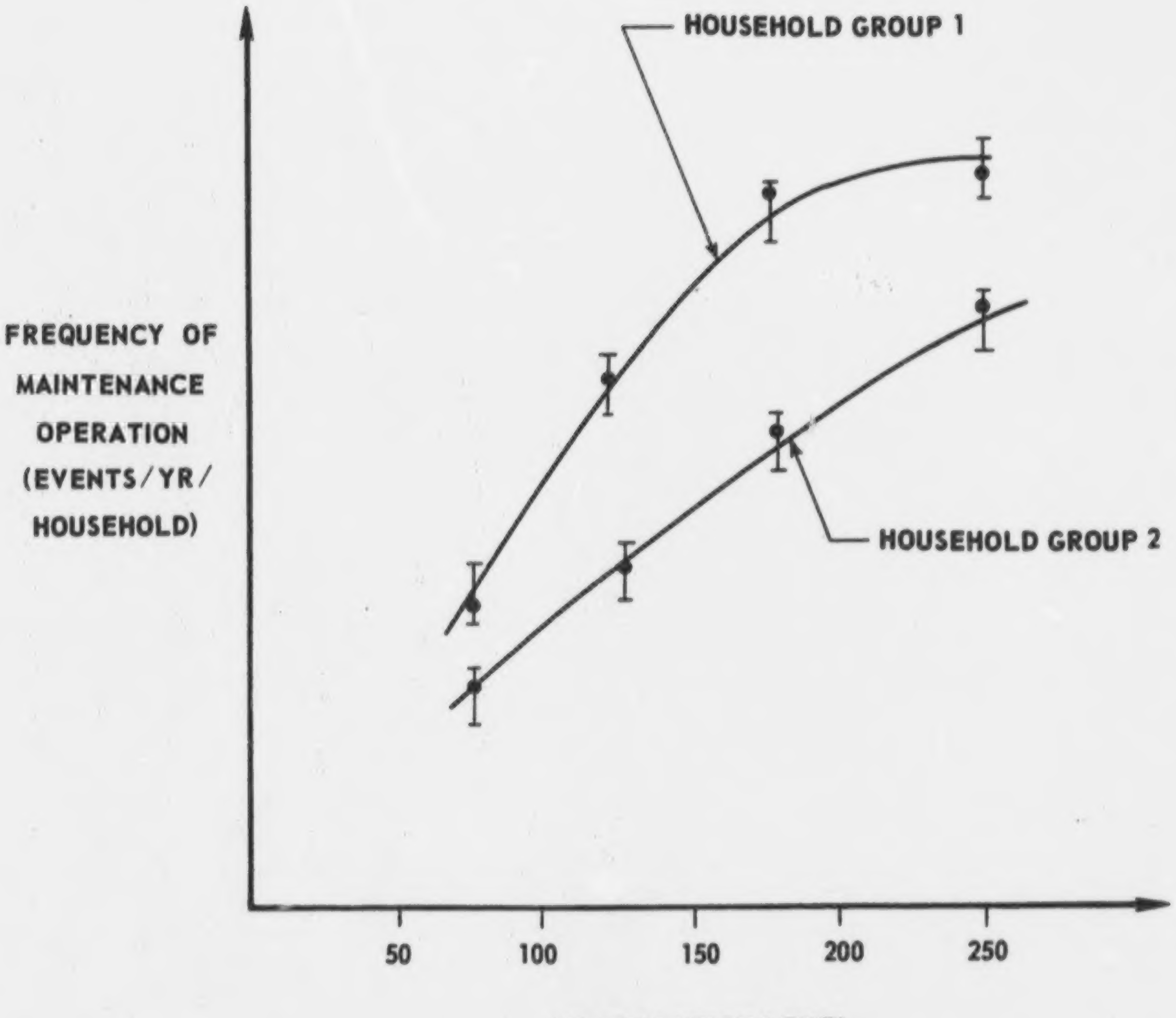
3. AN AREA PROBABILITY SAMPLE DESIGN FOR APPROXIMATELY 1,500 PERSONALLY ADMINISTERED INTERVIEWS FORMED THE CORE OF THE SURVEY METHOD

A survey questionnaire, reproduced in Appendix A, provided the vast majority of the data for analysis. The method of developing,

EXHIBIT II

National Air Pollution Control Administration

ILLUSTRATION OF FUNCTIONAL RELATIONSHIPS



administering, and analyzing this questionnaire is summarized in this section. It is explained in more detail in Chapter IV.

(1) Sampling Zones: Four sampling zones, as defined by the isopleths of Exhibit I, following page I-8, were used. The annual air particulate level of Zone 4, the central Philadelphia-Camden area, is greater than 125 micrograms per cubic meter; Zone 3 is between 100 and 125; Zone 2 is between 75 and 100 and Zone 1, basically the suburban and rural area, is less than 75. Isolated Zone 2 levels occur in Trenton and a few other communities away from Philadelphia. A small Zone 3 area occurs in the Wilmington area.

(2) Sampling Determination: An area probability sample was designed for 450 samples within each zone, for a total of 1,800 interviews. (Approximately 1,500 usable samples were analyzed.) This sample design, based on the 1960 Census, was "self-correcting" in the field to take account, on-the-spot, of changes in the number of housing units over the decade. Use of a constant sampling ratio for selection of households to be interviewed within each of 75 area segments chosen in each Zone proportionate to its 1960 household population automatically made proper adjustment for increases or decreases that have occurred since 1960.

(3) Development of Questionnaire: A small number of group depth interviews were conducted with a moderator guiding the discussion of five couples randomly selected from the Philadelphia area at each meeting. Without discussing air pollution, unless it came up naturally through the group couples, household cleaning and maintenance topics were probed for about two hours at each session. The sessions were tape recorded and analyzed for clues (1) about the types of attitudes and possibly behavioral patterns liable to be associated with residential cleaning and maintenance, and (2) on the best phrasing of questions for the questionnaire.

A questionaire, similar to Appendix A, was developed, pretested, and modified to the one in Appendix A. Statements on cleaning and maintenance were also developed and pretested at this stage for the principal factor analysis explained below.

(4) Main Sections of the Questionnaire

The questionnaire and interview procedure consisted of six main sections:

- Attitudes through a statement card sort and some questions
- Demographic and economic information

- Maintenance and cleaning performance information
- Cost of maintenance and cleaning operation estimates
- Neighborhood cleanliness observations by the respondent
- Residence characteristics

(a) Attitudes: Each respondent was asked to sort a set of 56 statements on small cards into 9 categories ranging from "agree most" with the statement to "disagree most" with the statement. The number of statements placed in a sub-pile varied from 2 at the extremes to 10 in the 3 "neutral" sub-piles. (See Appendix C.)

Examples of statements are:

> "It seems to me that we're always painting or patching some room in the house,"
>
> "Both of us work, so that most cleaning has to wait until we can get to it," and
>
> "Most friends and neighbors don't care how you keep your house as long as they enjoy themselves when they visit you."

In addition, at the end of the questionnaire, respondents were asked questions directly on their estimates of the effect of air particulate matter pollution on specific cleaning and maintenance requirements.

(b) Demographic and Economic Information: Data on the following categories were accumulated from the respondent:

- Sex
- Age
- Education
- Occupation
- Marital Status
- Number of Children
- Family Income
- Race

(c) Maintenance and Cleaning Performance Information: Data were obtained on 27 cleaning and maintenance operations, 15 inside the house operations and 12 outside. Some of the major inside operations were painting walls, wallpapering walls, washing windows, dry-cleaning carpeting and draperies, and washing floor surfaces. Some of the major outside operations were painting walls, painting trim, and washing windows.

For each of the 27 operations, questions were asked leading to an estimate of the frequency with which the operation is performed and whether the operation is contracted out or done by a household member (do-it-yourself).

(d) Cost of Maintenance and Cleaning Operations Estimates: Information on the cost of each of the 27 operations, on a per job basis, was asked in the following categories when appropriate to a particular respondent: basis for cost estimate, extent of job, cost of supplies, cost of labor, do-it-yourself savings.

(e) Neighborhood Cleanliness Observations by the Respondent: Questions were asked on the dirtiness of the neighborhood, factories nearby, and the presence of soot or dirt as a result, etc., in addition to the specific attitude questions about air particulate level effects on each of the 27 operations.

(f) Residence Characteristics: The questionnaire began with questions on length of residency in the house or apartment, rent or own, size of house, number of rooms, type of exterior, etc.

4. PRINCIPAL FACTOR ANALYSIS LED TO THE SEGMENTATION OF RESPONDENTS INTO SIX CATEGORIES RELATED TO ATTITUDES ON CLEANING AND MAINTENANCE OPERATIONS

Analysis of the results of the "profiles" of the respondents sorting of the 56 statements on cards, using a principal factor technique, resulted in six segments explaining most of the variation in the card sorting profiles. These segments merely reflect attitude toward residential cleaning and maintenance; they do not imply actual behavior or variation of behavior with air particulate level. Whether or not behavior is affected by attitude is a result of the analysis of the survey questions on cleaning and maintenance frequency compared to the attitude segments. (See Table 5a, following page VI-4.)

For convenience of labeling and to give an indication of the dominant theme of each segment, they have been coined: dutiful, proud, do-it-yourself, hit-or-miss, disinterested, and social. Fourteen percent of the respondents fell outside of these six segments and were unclassified.

5. FREQUENCY RATES OF PERFORMING CLEANING AND MAINTENANCE OPERATIONS WERE DETERMINED FOR EACH POLLUTION ZONE BY VARIOUS DEMOGRAPHIC AND ATTITUDINAL SUBGROUPS

Tabulations of frequency rates for each of the 27 operations were made as an area total and for each pollution zone for all households sampled and by various demographic and attitudinal subgroups. These appear in Appendix B. Important tabulations were made by demographic variables such as family income and length of residence.

These frequencies also were determined only for those who performed the operation. (See Exhibit III, following page III-3 for mean annual frequencies and standard errors of these means for each of the 27 tasks within each of the Zones.)

In addition, the precent of "do-it-yourselfers" was tabulated for each area total and by pollution zone. This percentage varied from the mid-nineties for operations such as washing floor surfaces to about 15% for cleaning furnaces.

(1) Data Variances Were Small: Data variances are sufficiently small so that the measures noted can generally be considered reliable. This is true for nearly all the data on all 27 operations, by pollution zone as well as by area total, and cross-tabulated by demographic and attitudinal categories. Consequently, the findings summarized in the next chapter and presented in detail in Appendix B can be considered statistically valid. For the first time, then, the validity of the findings for a major metropolitan area can be reasonably well defended. (See Exhibit III as noted above.)

As an example, for washing inside windows, the mean annual frequencies within the Zones range from 10.06 to 18.95, and the standard errors of these means range from 0.608 to 1.102. Clearly, this establishes the significance of the statistical relationships among frequencies and levels of particular pollution.

(2) Cost Information Was Discarded: Cost information and accompanying information on the size of a house, area of walls, etc. was generally fragmentary and/or unreliable

and had to be discarded when trying to convert frequency information into cost information. Cost information per operation, annually for a household, and areawide, had to be built from using the frequency and do-it-yourself information obtained from the personal interview questionnaire with the cost information obtained from interviewing suppliers and government sources on major cleaning and maintenance operations. (See Exhibit IX, following page V-8.)

* * * *

This chapter summarized the project methods employed and major method results.

III. RESIDENTIAL SOILING COSTS AND FREQUENCIES OF MAINTENANCE AND CLEANING OPERATIONS

A summary of major findings is presented in this chapter. Details on the frequencies of operations are given in Appendix B; details on residential soiling costs are given in Chapter V.

1. PROJECT FINDINGS CAN BE CLASSIFIED AS ATTITUDE, BEHAVIOR, AND COST FINDINGS WITH REGARD TO AIR PARTICULATE LEVEL

Although the primary purpose of this project was to determine residential soiling costs as a function of air particulate level, the complexities involved in trying to make these determinations and the survey methods employed permitted a buildup of a considerable amount of data on cleaning and maintenance behavioral patterns by different population segments and also data on attitudes on air pollution in general and air pollution specifically related to the 27 cleaning and maintenance operations. Some behavioral patterns, such as home inside window washing, may be affected in part by air particulate levels, even though there is low out-of-pocket cost associated with the window washing task. In addition, the population may perceive or believe they are affected in their behavior by air pollution. The strength of their perceptions or beliefs may be related to air particulate levels in their neighborhoods. Consequently, the project findings are separated into attitude, behavior, and cost classifications.

2. OPERATIONS PERFORMED BY HOUSEHOLD MEMBERS WERE ASSUMED FREE OF LABOR COST

Nearly all of the 27 operations can easily be performed by household members. As the data show, for most operations a sizable fraction of the operations are performed by household members. All 12 outside operations were performed at least 60% of the time on a "do-it-yourself" basis. Eight of the 15 inside operations were performed on a "do-it-yourself" basis over 85% of the time, and only wallpapering, cleaning furnaces, and dry-cleaning draperies and carpets were done less than 50% of the time on a "do-it-yourself" basis for those households where the operations were performed at all. Less than 25% of the population does or contracts for these dry-cleaning services; approximately 50% of the population does or contracts for wallpapering and cleaning furnaces. Consequently, the actual labor costs, and to a degree supplies costs, are much lower than would be charged by fully contracted operations as occurs for commercial buildings.

The "do-it-yourself" operations costs were considered to be supply costs only when these were non-trivial, such as for painting. The theories of various methods of imputing labor costs to household member operations were rejected partly because these "costs," assuming they can be defended, are not direct costs. Another important reason for considering these operations as labor cost free is that over 40% of the respondents fell in the "do-it-yourself" attitude segment as a result of the principal factor analysis. This implies in part that a significant portion of the population takes some pleasure in performing these operations. For example, the two "most agree" statements for the segment were: "working outside the house is fun" and "I like to work with my hands around the house."

3. ELEVEN OF THE TWENTY-SEVEN MAINTENANCE AND CLEANING OPERATIONS FREQUENCIES INCREASED AS AIR PARTICULATE LEVEL INCREASED

Of the 27 maintenance and cleaning operations analyzed, the frequencies of performing 11 of them were statistically demonstrated to increase as the air particulate level increased. This is true overall for the aggregate of all respondents in each zone, as well as being generally true by demographic and attitude segments. (The details of these results are tabulated in Appendix B.)

Exhibit III, following this page, summarizes the aggregate results of all 27 operations by zone. The annual frequencies noted in the exhibit and the statistical analysis performed to

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Operation/Task	ALL HOUSEHOLDS			HOUSEHOLDS PERF	
	Number	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Mea Annua Freque
PAINTING WALLS/CEILINGS					
Zone 1	471	0. 30	0. 016	76. 6 %	0. 39
Zone 2	421	0. 38	0. 046	72. 0	0. 53
Zone 3	299	0. 54	0. 205	67. 9	0. 80
Zone 4	251	0. 29	0. 058	59. 0	0. 49
WALL-PAPERING					
Zone 1	471	0. 07	0. 007	36. 9	0. 19
Zone 2	421	0. 10	0. 017	45. 4	0. 22
Zone 3	299	0. 12	0. 019	43. 1	0. 28
Zone 4	251	0. 12	0. 010	52. 6	0. 23
WASHING WALLS					
Zone 1	471	3. 04	0. 429	42. 7	7. 12
Zone 2	421	2. 68	0. 401	41. 3	6. 49
Zone 3	299	2. 99	0. 507	45. 8	6. 53
Zone 4	251	3. 36	0. 574	37. 1	9. 06
REPLACING AIR CONDITIONER FILTER					
Zone 1	471	0. 36	0. 058	20. 4	1. 76
Zone 2	421	0. 50	0. 078	26. 1	1. 92
Zone 3	299	0. 30	0. 068	17. 1	1. 75
Zone 4	251	0. 98	0. 344	21. 9	4. 47
REPLACING FURNACE FILTER					
Zone 1	471	0. 98	0. 106	50. 1	1. 96
Zone 2	421	0. 84	0. 102	38. 7	2. 17
Zone 3	299	0. 63	0. 105	31. 4	2. 01
Zone 4	251	0. 42	0. 092	25. 5	1. 65
CLEANING/OILING AIR CONDITIONER					
Zone 1	471	0. 25	0. 084	12. 3	2. 03
Zone 2	421	0. 40	0. 092	21. 4	1. 87
Zone 3	299	0. 50	0. 206	15. 1	3. 31
Zone 4	251	0. 32	0. 098	16. 7	1. 92

B

EXHIBIT III (1)

MEAN FREQUENCIES OF PERFORMING CLEANING AND MAINTENANCE TASKS WITHIN EACH AIR POLLUTION ZONE

HOUSEHOLDS		HOUSEHOLDS PERFORMING TASK			DO-IT-YOURSELF HOUSEHOLDS	
Mean Annual requency	Standard Error of Mean	Percent of All Households	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Percent of Households Performing Task
0.30	0.016	76.6 %	0.39	0.018	63.4 %	82.8 %
0.38	0.046	72.0	0.53	0.062	48.7	67.7
0.54	0.205	67.9	0.80	0.300	49.8	73.4
0.29	0.058	59.0	0.49	0.095	42.7	72.3
0.07	0.007	36.9	0.19	0.015	18.0	48.9
0.10	0.017	45.4	0.22	0.036	12.8	28.3
0.12	0.019	43.1	0.28	0.040	15.7	36.4
0.12	0.010	52.6	0.23	0.013	19.9	37.9
3.04	0.429	42.7	7.12	0.930	39.1	91.5
2.68	0.401	41.3	6.49	0.895	35.1	85.1
2.99	0.507	45.8	6.53	1.028	43.1	94.2
3.36	0.574	37.1	9.06	1.356	33.9	91.4
0.36	0.058	20.4	1.76	0.235	18.5	90.6
0.50	0.078	26.1	1.92	0.254	22.1	84.5
0.30	0.068	17.1	1.75	0.329	14.8	86.3
0.98	0.344	21.9	4.47	1.474	21.1	96.4
0.98	0.106	50.1	1.96	0.192	22.1	44.1
0.84	0.102	38.7	2.17	0.227	22.3	57.7
0.63	0.105	31.4	2.01	0.287	19.4	61.7
0.42	0.092	25.5	1.65	0.314	13.9	54.7
0.25	0.084	12.3	2.03	0.636	8.7	70.7
0.40	0.092	21.4	1.87	0.393	12.6	58.9
0.50	0.206	15.1	3.31	1.286	11.1	73.3
0.32	0.098	16.7	1.92	0.521	14.7	88.1

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EXHIBIT II

	ALL HOUSEHOLDS			HOUSEHOLDS PERFORMI	
Operation/Task	Number	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Mean Annual Frequency
CLEANING FURNACE					
Zone 1	471	0.74	0.072	62.4 %	1.19
Zone 2	421	0.77	0.095	51.8	1.49
Zone 3	299	0.38	0.031	40.5	0.94
Zone 4	251	0.46	0.061	46.6	0.99
DRY CLEANING DRAPERIES					
Zone 1	471	0.28	0.046	20.2	1.39
Zone 2	421	0.25	0.037	23.0	1.09
Zone 3	299	0.27	0.042	21.1	1.28
Zone 4	251	0.51	0.224	17.5	2.91
DRY CLEANING CARPETING					
Zone 1	471	0.43	0.196	12.5	3.44
Zone 2	421	0.11	0.032	13.5	0.81
Zone 3	299	0.09	0.019	10.7	0.84
Zone 4	251	0.07	0.027	6.8	1.03
SHAMPOOING CARPETING					
Zone 1	471	1.43	0.191	47.8	2.99
Zone 2	421	1.26	0.214	44.2	2.85
Zone 3	299	1.13	0.187	37.8	2.99
Zone 4	251	1.23	0.273	39.0	3.15
SHAMPOOING FURNITURE					
Zone 1	471	0.62	0.208	12.5	4.96
Zone 2	421	0.64	0.226	14.7	4.35
Zone 3	299	0.71	0.309	13.4	5.30
Zone 4	251	0.30	0.091	12.0	2.50
WASHING FLOOR SURFACES					
Zone 1	471	40.55	0.841	96.0	42.24
Zone 2	421	42.06	0.843	96.9	43.41
Zone 3	299	42.74	0.975	94.3	45.32
Zone 4	251	45.17	0.927	97.2	46.47
WAXING FLOOR SURFACES					
Zone 1	471	13.76	0.859	65.2	21.10
Zone 2	421	14.36	0.967	55.6	25.83
Zone 3	299	16.80	1.242	56.5	29.73
Zone 4	251	13.01	1.217	51.8	25.12

EXHIBIT III (2)

B

HOUSEHOLDS		HOUSEHOLDS PERFORMING TASK			DO-IT-YOURSELF HOUSEHOLDS	
Mean Annual requency	Standard Error of Mean	Percent of All Households	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Percent of Households Performing Task
0.74	0.072	62.4 %	1.19	0.107	8.7 %	13.9 %
0.77	0.095	51.8	1.49	0.170	7.1	13.8
0.38	0.031	40.5	0.94	0.039	8.4	20.7
0.46	0.061	46.6	0.99	0.113	10.0	21.4
0.28	0.046	20.2	1.39	0.189	5.3	26.3
0.25	0.037	23.0	1.09	0.128	8.1	35.1
0.27	0.042	21.1	1.28	0.138	6.7	31.7
0.51	0.224	17.5	2.91	1.216	3.2	18.2
0.43	0.196	12.5	3.44	1.511	2.3	18.6
0.11	0.032	13.5	0.81	0.215	3.1	22.8
0.09	0.019	10.7	0.84	0.109	4.0	37.5
0.07	0.027	6.8	1.03	0.315	1.6	23.5
1.43	0.191	47.8	2.99	0.373	43.3	90.7
1.26	0.214	44.2	2.85	0.458	35.2	79.6
1.13	0.187	37.8	2.99	0.442	32.1	85.0
1.23	0.273	39.0	3.15	0.654	32.3	82.7
0.62	0.208	12.5	4.96	1.550	11.7	93.2
0.64	0.226	14.7	4.35	1.450	12.8	87.1
0.71	0.309	13.4	5.30	2.170	11.1	82.5
0.30	0.091	12.0	2.50	0.626	10.8	90.0
40.55	0.841	96.0	42.24	0.781	89.6	93.4
42.06	0.843	96.9	43.41	0.783	89.3	92.2
42.74	0.975	94.3	45.32	0.809	90.6	96.1
45.17	0.927	97.2	46.47	0.813	93.6	96.3
3.76	0.859	65.2	21.10	1.109	59.4	91.2
4.36	0.967	55.6	25.83	1.326	51.3	92.3
6.80	1.242	56.5	29.73	1.599	53.8	95.3
3.01	1.217	51.8	25.12	1.783	48.2	93.1

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EXHIBI

		ALL HOUSEHOLDS			HOUSEHOLDS PERFOR	
Operation/Task		Number	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Mean Annual Frequenc
WASHING WINDOWS (INSIDE)						
	Zone 1	471	10.06	0.608	97.2 %	10.35
	Zone 2	421	11.78	0.701	97.9	12.03
	Zone 3	299	12.74	0.815	97.0	13.13
	Zone 4	251	18.95	1.102	98.0	19.34
CLEANING VENETIAN BLINDS/ SHADES	Zone 1	471	4.04	0.529	34.0	11.88
	Zone 2	421	6.17	0.656	48.2	12.80
	Zone 3	299	9.13	0.911	62.5	14.61
	Zone 4	251	9.21	0.986	59.4	15.51
PAINTING OUTSIDE WALLS						
	Zone 1	471	0.11	0.009	38.6	0.28
	Zone 2	421	0.10	0.017	28.5	0.35
	Zone 3	299	0.04	0.008	11.4	0.35
	Zone 4	251	0.03	0.008	10.4	0.29
PAINTING OUTSIDE TRIM						
	Zone 1	471	0.22	0.011	66.5	0.33
	Zone 2	421	0.29	0.038	68.9	0.42
	Zone 3	299	0.20	0.015	54.5	0.37
	Zone 4	251	0.20	0.024	55.0	0.36
CLEANING/REPAIRING SCREENS						
	Zone 1	471	0.80	0.072	56.5	1.42
	Zone 2	421	0.93	0.157	51.1	1.82
	Zone 3	299	0.79	0.095	45.2	1.75
	Zone 4	251	1.50	0.324	49.4	3.04
CLEANING/REPAIRING AWNINGS						
	Zone 1	471	0.05	0.016	4.0	1.25
	Zone 2	421	0.05	0.012	4.3	1.16
	Zone 3	299	0.04	0.013	4.3	0.93
	Zone 4	251	0.31	0.213	5.2	5.96
WASHING WINDOWS (OUTSIDE)						
	Zone 1	471	4.25	0.353	89.5	4.75
	Zone 2	421	4.59	0.376	89.5	5.13
	Zone 3	299	6.17	0.596	86.3	7.15
	Zone 4	251	10.09	0.879	89.3	11.30

EXHIBIT III (3)

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HOUSEHOLDS		HOUSEHOLDS PERFORMING TASK			DO-IT-YOURSELF HOUSEHOLDS	
Mean Annual requency	Standard Error of Mean	Percent of All Households	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Percent of Households Performing Task
10.06	0.608	97.2 %	10.35	0.620	91.9 %	94.5 %
11.78	0.701	97.9	12.03	0.711	87.7	89.6
12.74	0.815	97.0	13.13	0.830	90.0	92.8
18.95	1.102	98.0	19.34	1.111	90.1	91.9
4.04	0.529	34.0	11.88	1.356	32.1	94.4
6.17	0.656	48.2	12.80	1.198	44.6	92.6
9.13	0.911	62.5	14.61	1.303	58.8	94.1
9.21	0.986	59.4	15.51	1.449	53.4	89.9
0.11	0.009	38.6	0.28	0.016	27.4	70.9
0.10	0.017	28.5	0.35	0.053	15.9	55.8
0.04	0.008	11.4	0.35	0.041	8.0	70.6
0.03	0.008	10.4	0.29	0.055	5.2	50.0
0.22	0.011	66.5	0.33	0.012	49.3	74.1
0.29	0.038	68.9	0.42	0.053	35.9	52.1
0.20	0.015	54.5	0.37	0.020	29.4	54.0
0.20	0.024	55.0	0.36	0.038	31.5	57.2
0.80	0.072	56.5	1.42	0.114	53.3	94.4
0.93	0.157	51.1	1.82	0.295	45.4	88.8
0.79	0.095	45.2	1.75	0.178	39.8	88.1
1.50	0.324	49.4	3.04	0.627	46.6	94.4
0.05	0.016	4.0	1.25	0.390	3.6	89.5
0.05	0.012	4.3	1.16	0.266	3.3	77.8
0.04	0.013	4.3	0.93	0.291	3.6	84.6
0.31	0.213	5.2	5.96	4.065	3.6	69.2
4.25	0.353	89.5	4.75	0.387	83.6	93.4
4.59	0.376	89.5	5.13	0.411	72.1	80.6
6.17	0.596	86.3	7.15	0.671	75.6	87.6
0.09	0.879	89.3	11.30	0.953	73.8	82.6

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EXHIBIT

		ALL HOUSEHOLDS			HOUSEHOLDS PERFOR	
Operation/Task		Number	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Mean Annual Frequenc
CLEANING/REPAIRING STORM WINDOWS	Zone 1	471	2.07	0.282	55.6%	3.72
	Zone 2	421	1.60	0.231	48.5	3.30
	Zone 3	299	2.12	0.390	47.8	4.44
	Zone 4	251	3.69	0.631	41.0	9.00
WASHING AUTOMOBILES						
	Zone 1	471	19.98	0.898	80.9	24.70
	Zone 2	421	16.63	0.979	66.0	25.20
	Zone 3	299	14.94	1.164	50.8	29.41
	Zone 4	251	12.59	1.168	49.8	25.28
WAXING AUTOMOBILES						
	Zone 1	471	3.47	0.472	44.4	7.82
	Zone 2	421	3.49	0.481	42.5	8.21
	Zone 3	299	2.70	0.517	29.8	9.06
	Zone 4	251	1.75	0.413	28.3	6.18
CLEANING OUTDOOR FURNITURE						
	Zone 1	471	2.50	0.451	31.2	8.01
	Zone 2	421	4.29	0.654	29.7	14.44
	Zone 3	299	3.52	0.709	22.7	15.51
	Zone 4	251	1.19	0.470	6.4	18.59
MAINTAINING DRIVEWAYS/ WALKS	Zone 1	471	3.98	0.621	35.2	11.31
	Zone 2	421	7.25	0.854	32.8	22.10
	Zone 3	299	7.33	1.030	27.8	26.37
	Zone 4	251	6.84	1.086	21.1	32.42
CLEANING GUTTERS						
	Zone 1	471	1.12	0.220	45.9	2.44
	Zone 2	421	1.54	0.329	41.8	3.68
	Zone 3	299	1.35	0.437	21.7	6.22
	Zone 4	251	2.80	0.694	19.5	14.36
MAINTAINING SHRUBS/FLOWERS, ETC.	Zone 1	471	15.47	0.992	71.3	21.70
	Zone 2	421	13.16	0.977	64.6	20.37
	Zone 3	299	10.15	1.092	38.8	26.16
	Zone 4	251	3.27	0.737	14.3	22.87

EXHIBIT III (4)

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USEHOLDS		HOUSEHOLDS PERFORMING TASK			DO-IT-YOURSELF HOUSEHOLDS	
ean nual uency	Standard Error of Mean	Percent of All Households	Mean Annual Frequency	Standard Error of Mean	Percent of All Households	Percent of Households Performing Task
.07	0.282	55.6%	3.72	0.483	51.5%	92.7%
.60	0.231	48.5	3.30	0.447	41.9	86.3
.12	0.390	47.8	4.44	0.771	40.4	84.6
.69	0.631	41.0	9.00	1.380	34.2	83.5
.98	0.898	80.9	24.70	0.963	57.4	70.9
.63	0.979	66.0	25.20	1.193	40.9	61.9
.94	1.164	50.8	29.41	1.565	31.4	61.8
.59	1.168	49.8	25.28	1.713	36.3	72.8
.47	0.472	44.4	7.82	0.984	34.2	77.0
.49	0.481	42.5	8.21	1.032	29.7	69.8
.70	0.517	29.8	9.06	1.537	20.1	67.4
.75	0.413	28.3	6.18	1.320	21.1	74.6
.50	0.451	31.2	8.01	1.338	29.3	93.9
.29	0.654	29.7	14.44	1.917	27.6	92.8
.52	0.709	22.7	15.51	2.650	21.7	95.6
.19	0.470	6.4	18.59	5.806	6.4	100.0
.98	0.621	35.2	11.31	1.617	23.8	67.5
.25	0.854	32.8	22.10	2.098	23.5	71.7
.33	1.030	27.8	26.37	2.771	21.8	78.3
.84	1.086	21.1	32.42	3.293	15.9	75.5
.12	0.220	45.9	2.44	0.463	39.3	85.6
.54	0.329	41.8	3.68	0.758	33.0	79.0
.35	0.437	21.7	6.22	1.895	15.7	72.3
.80	0.694	19.5	14.36	3.046	17.1	87.8
.47	0.992	71.3	21.70	1.238	65.4	91.7
.16	0.977	64.6	20.37	1.322	56.3	87.1
.15	1.092	38.8	26.16	2.076	32.1	82.8
.27	0.737	14.3	22.87	3.757	13.9	97.2

determine significance were done also for those households where the operation was being performed at all. For example, only 26.2% of the population cleans outdoor furniture, varying from 31.2% in Zone 1 to 6.4% in Zone 4.

At least two operations--wash floors and wax floors--may have significant amounts of non-air particulate matter effects in them. Tracking of mud, etc., may play a factor. Referring to the data in Exhibit III for these two operations, the percent increase in washing floors, essentially a weekly operation, is not great. The statistical significance is due to the fact that just about everybody performs the operation and zonal variances of the mean were small compared to the 40 to 45 range. The waxing floor surfaces variation is more pronounced, but dips in Zone 4 from Zone 3.

All nine other operations can reasonably be assigned to air particulate matter, some of which might be generated within the house from forced air furnace heat and the like and thereby affect two of the inside operations--wash windows (inside) and clean venetian blinds/shades. The other inside operation (replace air-conditioner filter) can reasonably be ascribed to an outdoor effect. Its frequency rather dramatically rises in Zone 4.

All six outside operations have clear logical ties to air particulate matter. Cleaning screens, cleaning storm windows, washing windows (outside), cleaning outdoor furniture, cleaning gutters, and maintaining driveways and walks, show clear frequency increases with air particulate zone levels, and air particulate matter is obviously one of the major contributors to a dirty window, screen, etc., either directly or through means such as streaks from rain running from outside walls and trim onto the windows.

(1) There Are Indications of an Accelerated Sensitivity to Air Particulate Levels in the High Pollution Zone in the PENJERDEL Area

Zone 4, the central Philadelphia-Camden area, is the high pollution zone, defined simply as the zone where mean particulate level is greater than 125 micrograms per cubic meter. There are estimates that in some parts of the zone the annual average is over 150 micrograms per cubic meter.

Review of Exhibit III, following page III-3, shows indications of an accelerated sensitivity (nonlinear or threshold effect) as pollution levels increase. A graphic illustration of the reverse of this effect is shown as curve #1 of Exhibit II, following page II-2. Simple scanning of

Exhibit III on an operation-by-operation basis, comparing the general increases from Zone 1 to Zone 2 to Zone 3 with the increase from Zone 3 to Zone 4, indicates much more rapid behavioral changes from Zone 3 to Zone 4 than for the other 25 microgram per cubic meter steps. Replacing air-conditioner filters, washing windows (inside), clean/repair screens, wash windows (outside), clean/repair storm windows, and clean gutters all show this effect. Six of the eleven clearly show the acceleration tendency.

4. THE OPERATIONS FOR WHICH HOUSEHOLDERS' BEHAVIORS ARE SENSITIVE TO AIR PARTICULATE LEVEL ARE SOME OF THE LOW COST REGULAR CLEANING CHORES

In Exhibit IV, following this page, is a partitioning of the 27 operations into the eleven whose frequencies were sensitive to air particulate level and the 16 whose frequencies were not. Every one of the "sensitive to air particulate level" operations is a low cost item. Most of them are high frequency cleaning chore operations of the weekly, monthly, or seasonal type. None of them requires large cash outlays per operation. And, for those operations that are done often, they tend to be the ones done almost exclusively on a do-it-yourself basis: washing floors, washing windows, etc. Even for seasonal items such as cleaning/repairing screens, the repair function is seldom done; the frequencies noted are mostly cleaning frequencies.

EXHIBIT IV

National Air Pollution Control Administration

THE 27 OPERATIONS SEPARATED BY SENSITIVITY TO AIR PARTICULATE LEVEL*

Sensitive to Air Particulate Level

Inside

1. Replace Air-Conditioner Filter
2. Wash Floor Surfaces
3. Wax Floor Surfaces
4. Wash Windows (inside)
5. Clean Venetian Blinds/Shades

Outside

1. Clean/Repair Screens
2. Wash Windows (outside)
3. Clean/Repair Storm Windows
4. Clean Outdoor Furniture
5. Maintain Drawings, Walks
6. Clean Gutters

Not Sensitive to Air Particulate Level

Inside

1. Painting Walls/Ceilings
2. Wallpapering
3. Washing Walls
4. Replacing Furnace Filter
5. Cleaning/Oiling Air-Conditioners
6. Cleaning Furnace
7. Dry-Cleaning Draperies
8. Dry-Cleaning Carpeting
9. Shampooing Carpeting
10. Shampooing Furniture

Outside

1. Painting Outside Walls
2. Painting Outside Trim
3. Cleaning/Repairing Awnings
4. Washing Automobiles
5. Waxing Automobiles
6. Maintaining Shrubs, Flowers, etc.

---

* Based on those households where the operation is performed.

(1) The Major Behavioral Effect Seems To Be One of Wanting To Have a "Clear View of Outdoors"

Perhaps the most striking behavioral result of the data summarized in Exhibit III, following page III-3, is the large number of operations associated with being able to see out of the house--washing windows (inside, outside, and storm windows)--cleaning screens more than twice a year on the average in Zone 4, and cleaning blinds/shades all center about the windows of the house. There are low cost operations in the nonsensitive column of Exhibit IV, following page III-6, such as washing walls, washing autos, and maintaining shrubs, none of which are connected with seeing out of a house.

(2) The Operations Nonsensitive to Air Particulate Level Include High Cost Operations and Some Other Low Frequency Operations

The operations nonsensitive to the air particulate levels experienced in the PENJERDEL area fall roughly into four categories:

- Relatively high cost per operation
- Automobile appearance
- Infrequent, but regular maintenance
- Cleaning household articles

There is some overlap in this categorization.

The relatively high cost per operation items are painting and wallpapering.

Automobile appearance, waxing and washing, turned out to be insensitive to air pollution zone. Because many automobiles probably move significantly between zones, these measures are even questionable in concept for the purposes of this project. For example, some undoubtedly are stationed in an outdoor factory parking lot in a high pollution zone, but owned by a suburban worker. The questions were added to the questionnaire as two operations that might show an effect on the assumption that people are liable to be extra sensitive about the appearance of their cars compared to a house sidewalk, for example, and that perhaps the averaging effect over the number of respondents would lessen the effect of movements of autos around the area in the normal course of auto usage.

Infrequent, but regular, maintenance operations are represented by cleaning furnaces and cleaning and oiling air-conditioners. They proved to be quite insensitive to air pollution zone, and even the association with air pollution can be considered stretched.

Cleaning household articles refers to dry cleaning and/or shampooing of carpets, furniture, and drapes. These were done approximately one to five times per year for those who performed the operations. The dry cleaning operations are "medium" cost.

5. AIR PARTICULATE LEVEL IMPACT ON THE COSTS OF RESIDENTIAL CLEANING AND MAINTENANCE OPERATIONS IS MINIMAL AND UNIMPORTANT

In the PENJERDEL area, where annual air particulate level neighborhood averages vary from less than 75 micrograms per cubic meter to between 150 and perhaps 200 micrograms per cubic meter, the annual cost variations between the zones are very small.

(1) The Air Particulate Level Isopleth Contours Probably Represent Annual Averages Well Enough for the Purposes of This Project

The "shape" and general positioning over the PENJERDEL area of the isopleths are probably accurate enough for the purposes of this project. The shape of the contour was determined with an urban diffusion model, but the average concentrations were those actually monitored at approximately 30 sampling sites throughout the region.

(2) The High Cost Cleaning and Maintenance Operations Are Unaffected by Variations in Air Particulate Level in the PENJERDEL Area

The painting and wallpapering operations were unaffected by air particulate level in the PENJERDEL area. This variation of roughly three to one is a range well beyond the error range of the air pollution measurements, the general isopleth contours, and the basic error range of the mean frequency data for the operations. If significant effects exist, they should have been detected.

In addition to the summary data displayed as the first row line for each operation in Appendix B, approximately 50 segmentations were made (all the other rows for each operation in Appendix B). These segmentations are by length of residence in household, perceived difficulty of keeping household clean or in good repair, who keeps inside clean, who keeps outside clean, perception of neighborhood lived in, perception of air pollution in neighborhood, attitude factor segmentation, race, education, family income, number of dwelling units in structure, tenure of household, marital status of household head, and occupation of household head. In general, sensitivity or insensitivity to air particulate level for an operation followed the overall data of the first row (all households).

Those rows associated with perception of neighborhood conditions generally were sensitive for many operations; but this did not necessarily match with behavioral patterns derived from the other parts of the questionnaire.

In short, segmentation did not detect any important behavioral effects sensitive to air particulate level.

6. ANNUAL SOILING COSTS, PER MAJOR OPERATION, OVER THE PENJERDEL AREA ARE IN THE TEN MILLION TO FIFTY MILLION DOLLAR RANGE

Even though apparent costs of performing cleaning and maintenance operations do not vary as a function of air particulate level, computations were made of areawide costs for 11 of the 27 operations. These computations took into account the do-it-yourself aspects based on the survey questionnaire returns. The unit costs are mid-1969 costs. The costs are based on an estimate of 1,656,400 households in the PENJERDEL area in 1970.

The annual costs for the following operations are:

Inside	Annual Cost in Millions of Dollars
Paint walls/ceilings	56
Wash walls	19
Clean/oil air-conditioner	2
Dry-clean draperies	7
Dry-clean carpeting	9
Shampoo carpeting	27

Inside	Annual Cost in Millions of Dollars
Shampoo furniture	8
Wash floors	41
Wash windows	18
Outside	
Paint walls	31
Paint trim	50

7. A HIGHER PROPORTION OF RESIDENTS OF HIGH POLLUTION AREAS BELIEVED THEIR NEIGHBORHOODS WERE DIRTY THAN DID RESIDENTS OF LOW POLLUTION AREAS

Simple perception questions were asked about neighborhood cleanliness and concern about air pollution. In response to the question: "Compared to other neighborhoods that you know about, would you say that this neighborhood is--extremely dirty, fairly dirty, about average, fairly clean, or extremely clean?," 34% of the residents of Zone 4 replied either extremely dirty or fairly dirty, 25% of Zone 3 residents, 15% of Zone 2 residents, and 10% of Zone 1 residents replied to either of these. In response to the question: "Do you feel that air pollution is a problem in this neighborhood or not? Is it a serious problem or only a minor annoyance?," 51% of the residents of Zone 4 replied it was a serious problem, 39% did so in Zone 3, 31% in Zone 2, and 18% in Zone 1.

There is a clear perception pattern by zone, increasing as air particulate level increased. The first question about dirtiness applied to all sources of "dirt"; however, the second question is representative of four questions dealing directly with air pollution.

8. BELIEF THAT AIR POLLUTION AFFECTS THE FREQUENCY AND/OR COSTS OF CLEANING AND MAINTENANCE ACTIVITIES WAS SLIGHTLY POSITIVELY RELATED TO AIR PARTICULATE LEVEL

Each respondent was asked to indicate if he thought air particulate level (called "air pollution in the form of soot" in the questionnaire) affected the frequency and/or cost of performing each of the 27 cleaning and maintenance operations. These data are tabulated in Chapter VI, Table 6, following page VI-5, as the percentages of those who concur with the statement. For the window washing and other simple cleanliness tasks, the increasing pattern is quite evident; for example, 18%, 28%, 27%, and 42% were the results for Zones 1, 2, 3, and 4, respectively, for washing windows (inside). Patterns such as that for painting walls/ceilings were also common: 13%, 21%, 14%, and 16% for Zones 1, 2, 3, and 4, respectively.

In summary, attitudes toward the effects of pollution levels for simple cleaning tasks follow the behavioral effects noted in response to the direct questions earlier in the questionnaire on frequency of performing the operation.

* * * *

This chapter has summarized the findings of the project.

IV. DESCRIPTION OF THE SURVEY RESEARCH METHOD USED TO DETERMINE ATTITUDES AND BEHAVIOR TOWARD MAINTENANCE AND CLEANING OPERATIONS

The survey research method was summarized in Chapter II. It is described in more detail in this chapter.

1. QUESTIONNAIRE DEVELOPMENT WAS ACCOMPLISHED THROUGH A MULTI-STAGE PROCESS

Before any attempt was made to design a structured survey instrument, the study team undertook an intensive review of questionnaire materials that had been employed in earlier related studies. Specifically examined were the materials used by Michelson and Ridker, in order to help determine what areas of inquiry relative to effects of particulate air pollution appeared both most pertinent and readily answerable by householders.

As a general supplement to this review of previous work in the field, the project team also consulted in considerable depth with the Project Officer and his associates in NAPCA to determine areas of inquiry of special importance or interest.

Moreover, in the initial stages of questionnaire development, special emphasis was placed on the conduct and analysis of a number of group depth interviews with householders recruited from all sections of the PENJERDEL Region. These group depth interviews assisted materially not only in bringing useful areas of inquiry into sharper focus but also in establishing the array of item statements intended to serve as the basis for factor analysis segmentation of householders into basic attitudinal patterns relating to household cleaning and maintenance.

After these several preparatory steps had been completed, an initial draft of a structured questionnaire, including a proposed set of factor-segmenting statements, was written.

Pretesting of the questionnaire with nine PENJERDEL householders under actual field conditions demonstrated the desirability of some minor modifications in content and format of the draft questionnaire to shorten interview length and to minimize respondent fatigue. These revisions were made.

Another pretest, of the factor-segmentation statements, conducted among 30 staff associates of the study team, demonstrated that all of the proposed statements were useful and produced either five or six apparently meaningful segmentations of householders. Each of the factor segments suggested by this pretest did, in fact, appear in the full-scale study, with some modifications. The quantitative size of most of them varied substantially, however, from the sizes indicated in the test--but this was to be expected, since the 30 staff associates could not be considered proportionally representative of some large portions of the population.

Following these preliminary pretests, the questionnaire and set of statements were submitted through NAPCA to the Bureau of the Budget for approval, along with a supporting letter. BOB approved the questionnaire after suggesting some minor additions, all of which were incorporated.

A final pretest in the PENJERDEL Region indicated no need for further revisions. Thereupon full-scale field interviewing was undertaken with the structured questionnaire and set of item statements. A copy of these comprises Appendix A of this report.

2. SAMPLE SELECTION INVOLVED DETERMINATION OF FOUR DISTINCT AREA PROBABILITY SAMPLES OF HOUSEHOLDS IN THE PENJERDEL REGION, ONE FOR EACH PARTICULATE AIR POLLUTION ZONE

Using the latest available results from its diffusion model for the PENJERDEL Region, NAPCA furnished the study team with maps delineating the isopleth contour boundaries for three concentrations of air particulate pollution. For purposes of this study, the boundary of the fourth (and lowest) concentration was established as the perimeter of the 11-county PENJERDEL Region.

(A representation of these maps for the entire Region has appeared already in Chapter I of this report. They will be shown and discussed in more detail on subsequent pages of this Chapter.)

The sample design for this study, a stratified random cluster, is an area probability sample with disproportionate allocation.

The universe was the PENJERDEL Region 11-county area.

The primary stratification consisted of four Zones defined as four distinct air particulate pollution areas.

Zone 1: pollution less than 75 $\mu g \text{-} m^{-3}$

Zone 2: pollution 75 to 100 $\mu g \text{-} m^{-3}$

Zone 3: pollution 100 to 125 $\mu g \text{-} m^{-3}$

Zone 4: pollution 125 and more $\mu g \text{-} m^{-3}$

Because this study was concerned with determining interzonal differences, equal allocation of the sample among the four zones was deemed advisable to provide for detailed analysis among them. For this reason, the sample allocation was 75 area segments to each of the four zones--a total of 300 segments. A sub-sampling procedure within segments was designed to provide 450 interviews within each zone--or a total of 1, 800 interviews.

By the use of 1960 Census Tracts, Block Statistics and Enumeration Districts, area segments were delineated and sketched for the interviewer. Definitions of these segments either by streets, roads and other known boundaries or use of a prescribed subsampling ("chunking") procedure for larger land areas were made so that the interviewer could identify the area correctly and uniquely.

The two maps on the following pages, Exhibit V including the entire PENJERDEL Region and Exhibit VI a close-up of the cities of Philadelphia and Camden, indicate the number of segment areas selected within each contour boundary by county, by city or town, and by subsection within Philadelphia. (Large-scale, detailed maps are on file in the Philadelphia headquarters of National Analysts locating exactly and showing the specific bounds of each of the 300 area segments.)

It should be noted that all 75 segments within Zone 4 and 72 of the 75 segments within Zone 3 were located in either Philadelphia or Camden. The remaining 3 segments for Zone 3 were located in Wilmington. Approximately half (37) Zone 2 segments were located in Philadelphia, but only 5 of the Zone 1 segments were within the city limits of Philadelphia.

EXHIBIT V

National Air Pollution Control Administration

OTHER PENJERDEL AREAS ILLUSTRATING NUMBER OF INTERVIEWING SEGMENTS

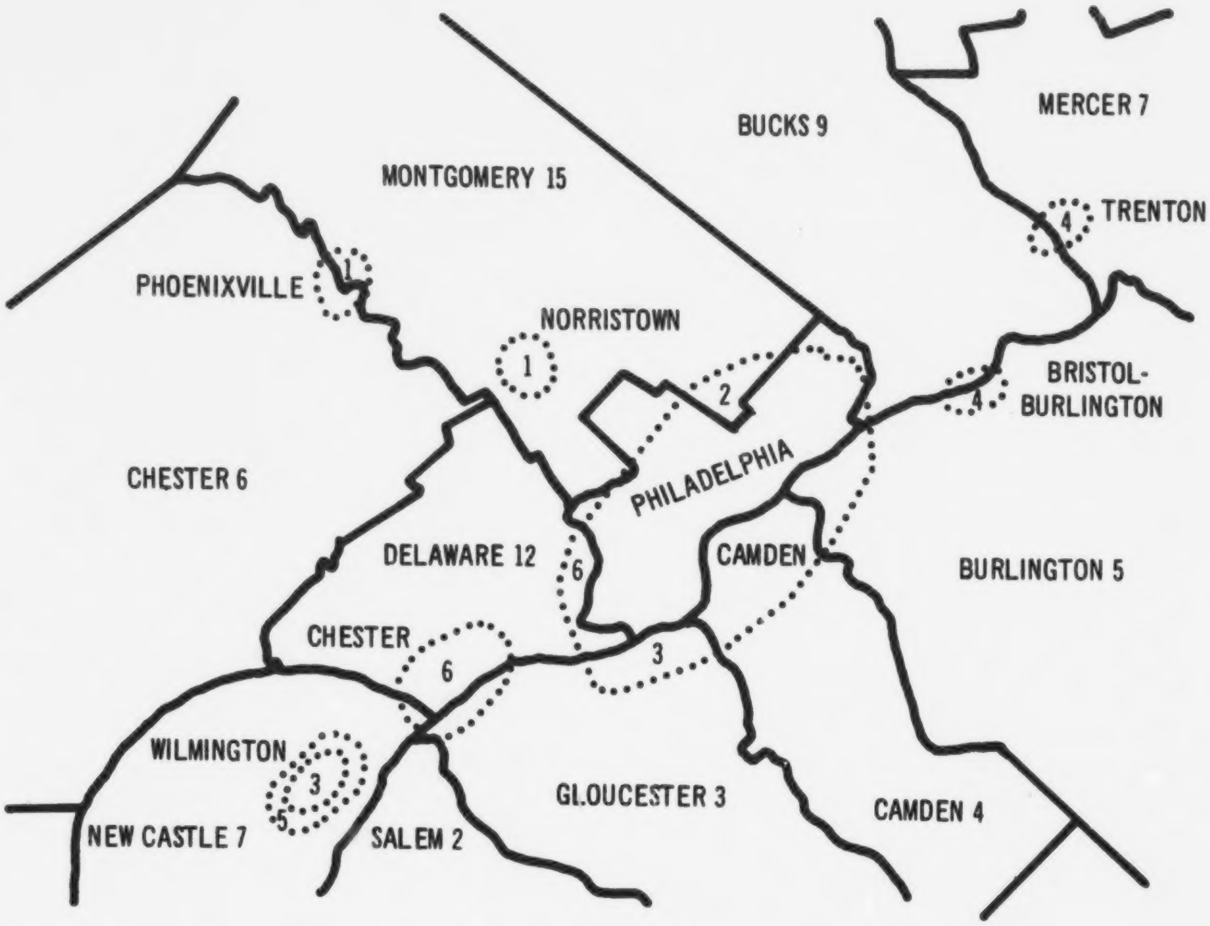
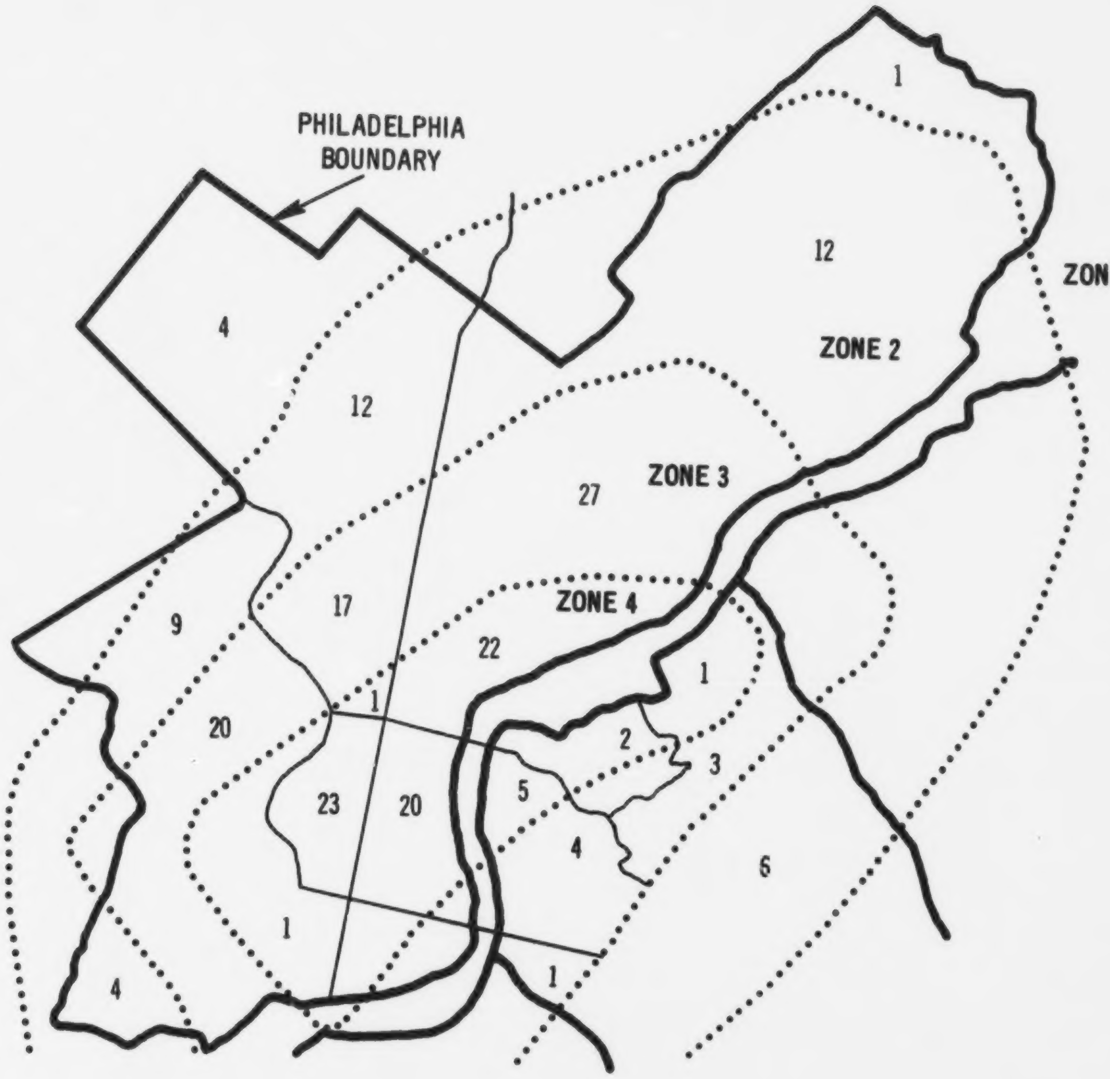

BUCKS 9
MERCER 7
MONTGOMERY 15
TRENTON
4
PHOENIXVILLE
1
NORRISTOWN
1
2
BRISTOL-BURLINGTON
4
CHESTER 6
PHILADELPHIA
DELAWARE 12
6
CAMDEN
BURLINGTON 5
CHESTER
6
3
WILMINGTON
3
5
NEW CASTLE 7
SALEM 2
GLOUCESTER 3
CAMDEN 4

EXHIBIT VI

National Air Pollution Control Administration

PHILADELPHIA AND CAMDEN NUMBER OF INTERVIEWING SEGMENTS


PHILADELPHIA BOUNDARY
ZONE 1
ZONE 2
ZONE 3
ZONE 4
1
12
4
12
27
17
9
22
1
20
1
2
3
23
20
5
4
6
1
4
1

Statistical Considerations

It has been noted earlier in this report that the probability methods of selection of the zonal samples of households for interview has insured their representativeness. This has enabled the employment of standard statistical formulary for computing means, standard errors of means, etc., taking sizes of zonal samples into proper account.

The following equations have been used for making the computations within each Zone that are presented in Exhibit III, following page III-3:

All Households

Mean annual frequency of performing a given task:

$$m = \frac{\sum X_i}{N}$$

Standard error of this mean:

$$\sigma_m = \frac{1}{N}\sqrt{\frac{N\sum X_i^2 - (\sum X_i)^2}{N-1}}$$

Households Performing a Given Task

Mean annual frequency of performing the task:

$$m' = \frac{\sum X_i}{kN}$$

Standard error of this mean (approximate):

$$\sigma_{m'} = \frac{1}{k}\sqrt{\sigma_m^2 - \frac{m^2\,(1-k)}{kN}}$$

Where,

X_i = annual frequency of performing task in the i^{th} household in the Zone

N = size of obtained sample of households in the Zone

k = percent of obtained sample of households in the Zone reporting that the task has ever been performed

3. FIELD ADMINISTRATION FOLLOWED RIGIDLY PRESCRIBED PROCEDURES, BUT CONSIDERABLE DIFFICULTY WAS ENCOUNTERED IN MANY URBAN SEGMENTS

Immediately following Bureau of Budget approval of the survey instruments, a detailed manual for field interviewers assigned to the study was prepared. This manual was designed to instruct interviewers in all phases of their work, including strict adherence to sampling specifications.

In addition to the regular complement of experienced interviewers on its resident field staff in the PENJERDEL Region, we diligently sought out from all available Federal, state, and local employment agencies -- as well as from community and neighborhood civic groups -- persons capable of being trained as interviewers in the "stress" areas of Philadelphia and Camden.

During the course of the field work on the study more than 35 qualified persons were recruited from these sources. Each one came into our Philadelphia office for two days of intensive personal training by administrative field staff and became thoroughly familiar with all details of the training manual.

When they were sent out in the field to the specific "stress" segments for which they had been hired, however, only a handful of them continued to work satisfactorily for more than a day or two before resigning, or just disappearing.

The great majority of the regular resident interviewers were unwilling to work in "stress" segments. Those few of the regulars who were willing to attempt interviewing in these areas had to be withdrawn from the segments in other parts of the Region where they normally would have been working. Moreover, these people -- not indigenous to the areas where they tried to work -- fell significantly short of their normal production rates.

As a consequence of these difficulties, it proved to be impossible to obtain the expected number of 1,800 completed interviews despite repeated extensions of interviewers' deadlines and the incurment of field costs substantially in excess of the amount budgeted for this phase of the work.

Only by means of thorough and persistent daily contact with each working interviewer on the part of field administrators in Philadelphia, supplemented by the most careful scrutiny of completed interviews in our Quality Control Department, was it possible to achieve the final total of 1,442 interviews.

However, the interviews obtained match very nearly exactly the overall specifications for each Zone stipulated by the sample design because of the close monitoring and direction given by our Quality Control Department.

Every one of the 300 area segments was worked at least in part. Many, of course, were fully completed. A recapitulation of field accomplishment is presented below.

	Total	Zone 1	Zone 2	Zone 3	Zone 4
Segments Assigned	300	75	75	75	75
Segments Worked	300	75	75	75	75
Households Screened	1,526	512	445	310	259
Completed Interviews	1,442	471	421	299	251

The final total of completed interviews was 80.1% of the expected total and this completion percentage varied from the expected level in the range of 104.7% in Zone 1 down to 55.8% in Zone 4.

The effects of these zonal completion rates on expected standard errors are as follows:

Zone	Interviews Expected	Interviews Obtained	% of Expected	Square Root of %	Change (±) in Expected Standard Error of Mean
1	450	471	104.7%	102.3	- 2.3%
2	450	421	93.6	96.7	+ 3.4
3	450	299	66.4	81.5	+22.7
4	450	251	55.8	74.7	+33.9

Change in Expected Standard Error of Differences Between Means

Zone 1 vs. Zone 2	± 0.0%
Zone 1 vs. Zone 3	+ 11.0%
Zone 1 vs. Zone 4	+ 17.3%
Zone 2 vs. Zone 3	+ 13.3%
Zone 2 vs. Zone 4	+ 19.5%
Zone 3 vs. Zone 4	+ 28.6%

Fortunately, none of the increases in standard errors that have resulted from under-completion rates affects in any significant fashion the findings and conclusions presented in this report.

Data Processing was conducted to accomplish the following steps:

- Editing and Coding of Completed Questionnaires
- Keypunching and Computer Runs
    - Determination of mean annual frequencies and standard errors of means for performance of each of 27 tasks
    - Tabulation of additional personal interviews data
    - Weighting of zone samples to obtain Total PENJERDEL Region findings
- Factor Analysis Segmentation (See Appendix C.)

Editing and Coding of Completed Questionnaires

All screening forms and questionnaires received from field interviewers were carefully checked for completeness and conformity to sampling specifications by the Quality Control Department. The 1,442 acceptable questionnaires obtained in the field were then put into thorough data processing operations.

Our normal coding practices have always been consistent with the highest standards and are summarized below:

- Codes were prepared for all categories of information. Quotations were pulled from a subsample of questionnaires for use in developing codes for open questions. Miscellaneous categories included no ideas or items given by as many as 2% of the respondents.

- Check-coding was performed by experienced supervisory personnel on the basis of a 100% check at the start of coding. This 100% check was continued until an acceptable coder difference level had been reached. Thereafter, at least 10% of the work of each coder was checked throughout the coding process. If the low proportion of coder differences was not maintained, a 100% check was reinstituted.

- Codes and coding instructions were revised as required by check-coding results, and questionnaires recoded to conform with revisions.

- All data and responses coded into miscellaneous categories were recorded verbatim, separately for each question, and identified by interview number. These lists were reviewed continually to determine if additional categories should be added to the codes. The record of miscellaneous data and responses not added as separate categories was retained after coding for purposes of analysis.

Data Processing

All keypunching was verified 100%. Extensive edits were designed to detect and correct impossible and (some) improbable entries--whether the source of error was in the respondent, the interviewer, the coder, or the puncher. Standards of performance for the project were set, and if a keypunch operator fell below the minimum standard, that operator was removed from the project.

All tabulations and cross-tabulations, including computation of mean annual frequencies and stardard errors of the means for the 27 cleaning/maintenance tasks, were performed in-house on our IBM 1130. The factor analysis segmentation, discussed in the next section of this chapter, was performed on outside UNIVAC 1108 equipment.

In order to tabulate results for the Total PENJERDEL Region, it was necessary to weight differentially the samples obtained in each zone. This weighting compensated for the fact that samples were specified for the four zones without regard to their relative household population sizes. Weights were computed and employed to arrive at weighted totals as follows, using the best available estimates (from Rand, McNally) of the 1970 households within each zone:

	Estimated # of Households 1970 (Rand, McNally)	% Distribution	Obtained Sample	Weight	Weighted Sample	% Distribution
Total	1,656,404	100.0%	1,442		4014.3	100.0%
Zone 1	783,757	47.3	471	4.0	1884.0	47.0
Zone 2	381,038	23.0	421	2.2	926.2	23.1
Zone 3	316,360	19.1	299	2.6	777.4	19.3
Zone 4	175,249	10.6	251	1.7	426.7	10.6

V. DESCRIPTION OF THE SOILING COST METHOD DEVELOPED AND SOILING COST FINDINGS

This chapter consists of (1) a detailed description of the cost determination method used to determine soiling costs, and (2) a summary of the costs computed. Because of our major finding that out-of-pocket costs do not vary significantly among the Zones, only the following costs are presented here:

- Unit cost of performing the operation, for example, labor and supply costs per square foot of outside painting
- Cost of performing an average operation, for example, inside painting of two or three rooms
- Total annual cost of performing the operation in the PENJERDEL area

The costing method is straightforward and is based on obtaining (1) the unit cost data from suppliers and government sources, and (2) the frequency information, proportion of households that perform the operation, and the proportion of these households where the operation is a "do-it-yourself" one from the questionnaire administered by an interviewer.

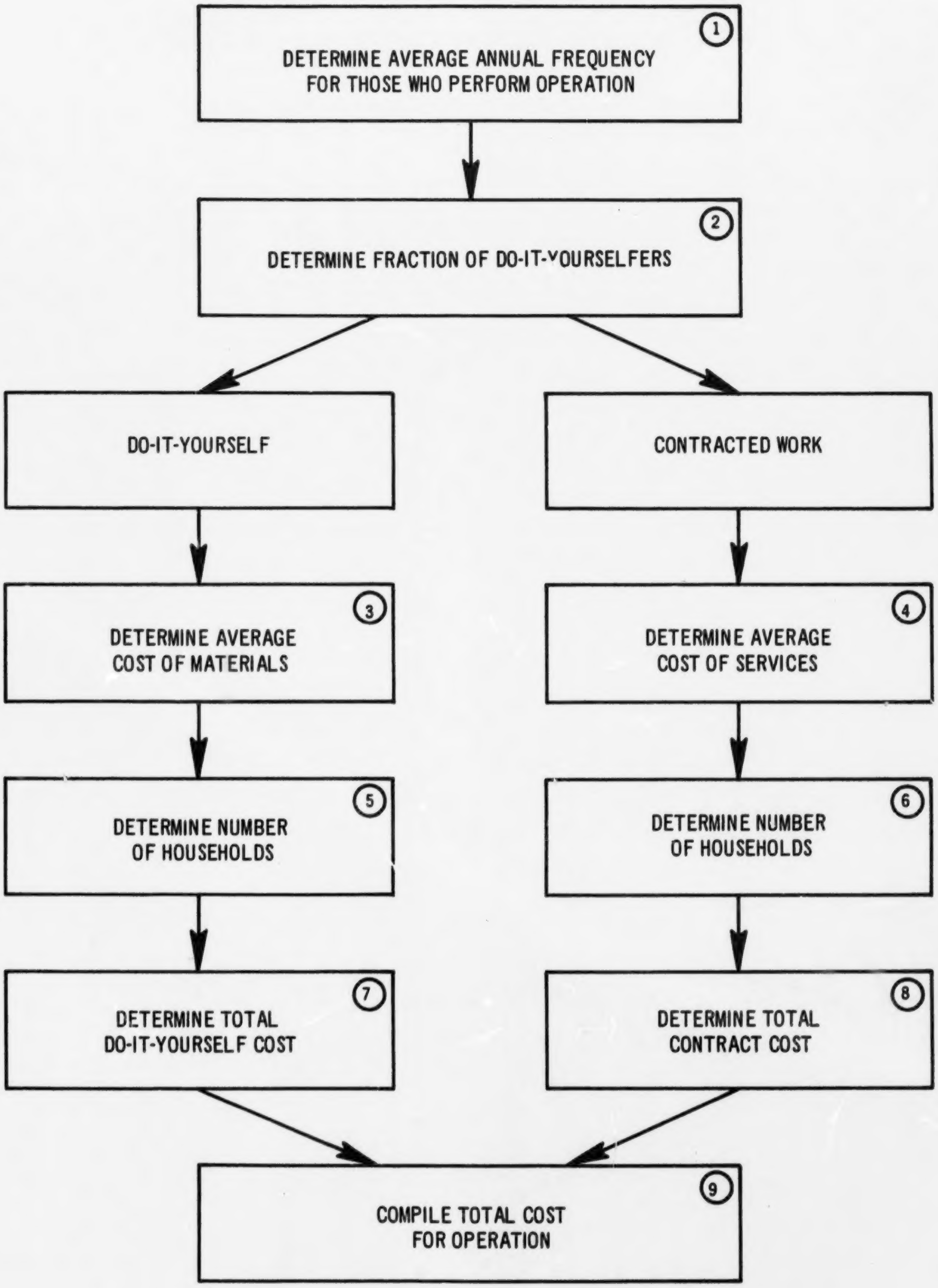
1. COSTS WERE DEVELOPED FOR EACH OF ELEVEN CLEANING AND MAINTENANCE OPERATIONS

Exhibit VII, following this page, depicts the logic of the costing method in flow diagram form. Item (1), annual frequency, is developed from the total response from the appropriate element of questions 28 or 30. Item (2), do-it-yourself function, is developed again from responses to either question 28 or 30. Items (3) and (4), costs of materials and services, came from the field interviews with Philadelphia area suppliers and from government sources as described later in this chapter. Items (5) and (6), number of households, were derived from a projection of 1960 Census and questionnaire data. A Rand-McNally-based projection of the 1960 Census to 1970 resulted in 1,656,404 households in the total eleven-county area, with 783,757 in Zone 1, 381,038 in Zone 2, 316,360 in Zone 3, and 175,249 in Zone 4. (No round-off has been made on these figures; obviously, digit accuracy is not implied.) (The number of members per household is relatively constant across zones, varying from 3.63 in Zone 1 to 3.54 in Zone 4.) The questionnaire data supplied a means of determining total number of do-it-yourself households performing the operation and total number of contract use households performing the operation, again from question 28 or 30. Items (7) and (8), determine do-it-yourself and contract costs, are essentially a multiplication of the cost of a

EXHIBIT VII

National Air Pollution Control Administration

FLOW DIAGRAM OF COST DETERMINATION METHOD


①
DETERMINE AVERAGE ANNUAL FREQUENCY FOR THOSE WHO PERFORM OPERATION
②
DETERMINE FRACTION OF DO-IT-YOURSELFERS
DO-IT-YOURSELF
CONTRACTED WORK
③
DETERMINE AVERAGE COST OF MATERIALS
④
DETERMINE AVERAGE COST OF SERVICES
⑤
DETERMINE NUMBER OF HOUSEHOLDS
⑥
DETERMINE NUMBER OF HOUSEHOLDS
⑦
DETERMINE TOTAL DO-IT-YOURSELF COST
⑧
DETERMINE TOTAL CONTRACT COST
⑨
COMPILE TOTAL COST FOR OPERATION

typical job operation by the number of households involved and by the annual frequency of performing the operation. Item (9) combines the annual do-it-yourself and contract costs.

2. THE DETERMINATION OF UNIT COSTS RELIED SOLELY ON NONRESPONDENT DATA AND USED LOCAL SUPPLIERS AND GOVERNMENT SOURCES

As stated before, the cost data from the survey questionnaire were discarded because of their fragmentary and inconsistent nature. Too few people could answer these questions adequately to rely on the validity of the aggregate data.

Since this was anticipated, eleven operations were studied from the standpoint of obtaining basic cost data from suppliers and government sources. The method and unit cost results are described in this section.

The data were collected primarily by telephone and personal interviews from a sample of household maintenance contractors and building managers in the region. Because of the time and cost limitations, the sample was not a probability sample. Data sources were searched "from the top, down." That is, national sources were sought first, then regional sources, then trade-oriented sources (business and trade associations) and finally, individual contractors and managers. Data were collected until a trend became evident. It was obvious from the outset that there is considerable variation among contractors' prices for any given service. The costs indicated in this report must be considered as "order of magnitude" information and can vary by as much as ± 25%.

No value has been assumed for labor on tasks performed by householders themselves. Because any possible method of evaluating "do-it-yourself" labor is subject to debate, only materials and supplies have been included in the cost computations. The user of the information is then free to impute any logical value. This practice is consistent with that of the U. S. Department of Commerce. (See Exhibit IX for some imputed-cost data.)

No significant relation was found between prices for any given service and the location of the contractors' places of business within the region. All costs apply to the entire region.

Eleven maintenance operations were initially identified and unit costs were developed according to each determining factor. These operations, category, unit cost, and explanations and comments on them are listed in Exhibit VIII, following this page. Further details on the data sources are given in Section 5 at the end of this chapter.

A

Operation	Category	$/Unit	U
1. Painting Exterior Surfaces	Union Contractor	0.44	Squar
	Nonunion Contractor	0.22	Squar
	Do-It-Yourself	0.03	Squar
2. Painting Exterior Trim Only	Union Contractor	20.00	Windo Door
	Nonunion Contractor	10.00	Windo Door
	Do-It-Yourself	1.00	Windo Door
3. Painting Interior Surfaces	Union Contractor	110.00	Room
	Nonunion Contractor	55.00	Room
	Do-It-Yourself	15.00	Room
4. Washing Walls	Homeowners and Tenants	0.05	Square
	Multiunit Operators	0.03	Square
5. Window Washing	Inside	1.25	Window
	Outside	2.00	Window
6. Maintaining Air-conditioners	Window Units		
	. Replace filter	1.00	A-C Un
	. Preventive maintenance	13.50	A-C Un
	. Recondition	65.00	A-C Un

EXHIBIT VIII (1)

National Air Pollution Control Administration

B

COSTS (DOLLARS) PER UNIT OF SELECTED HOUSEHOLD MAINTENANCE OPERATIONS

$/Unit	Unit	Explanations/Comments
0.44	Square Feet	Includes wall surfaces, floor deck, and trim. Houses and garages 2 coats - 75%
0.22	Square Feet	
0.03	Square Feet	
20.00	Window or Door	Applies to doors and window frames of structures when not painting walls 2 coats - 75%
10.00	Window or Door	
1.00	Window or Door	
110.00	Room	Applies to walls, ceiling, and trim. Assumes average room size of 500 square feet. 2 coats - 75%
55.00	Room	
15.00	Room	
0.05	Square Feet	The cost applies to interior walls. Exterior washing by contractors is extremely rare.
0.03	Square Feet	
1.25	Window	Outside window washing is rarely contracted for residential structures.
2.00	Window	
1.00	A-C Unit	Do-It-Yourself
13.50	A-C Unit	Clean, oil, and replace filter
65.00	A-C Unit	Steam clean, spray paint, and replace parts

A

	Operation	Category	$/Unit	Unit
7.		Central-Private Residence		
		. Replace filter	0.40	Househo
		. Preventive Maintenance	25.00	Househo
8.		Central-Multiunit Building		
		. Preventive Maintenance	50.00	Structu
9.	Dry Clean Draperies	. Cleaner	0.12	Square
		. Self-service machine	0.04	Square
10.	Dry Clean Carpeting	. In-cleaning plant	0.13	Square
11.	Shampoo Carpeting	. In Home		
		. Contractor		
		- For resident	0.11	Square
		- For building operator	0.07	Square F
		. Do-It-Yourself	0.04	Square F
12.	Shampoo Furniture	. Contractor	45.00	Househo
		. Do-It-Yourself	3.00	Househol
13.	Wash hard surface floors	. Wash Only	0.04	Square F
		. Strip and Rewax	0.15	Square F

Note: For painting by operators of multiunit apartment buildings, assume union price less 20%.

EXHIBIT VIII (2) B

$/Unit	Unit	Explanation/Comment
0.40	Household	Do-It-Yourself
25.00	Household	
50.00	Structure	Filters and "in-house" labor
0.12	Square Feet	
0.04	Square Feet	
0.13	Square Feet	Includes pick-up and delivery for "rolled and ready" carpets.
0.11	Square Feet	Includes furniture moving
0.07	Square Feet	Hallways, empty rooms
0.04	Square Feet	Solution and machine rental
		Aug. - 200 Square Feet
45.00	Household	Average sofa and 2 chairs
3.00	Household	Average sofa and 2 chairs
0.04	Square Feet	
0.15	Square Feet	

ldings, assume union price less 20%.

3. SIMPLE EQUATIONS WERE DEVELOPED FOR USE WITH SURVEY QUESTIONNAIRE DATA RESULTS TO DETERMINE THE COST OF AN OPERATION

The expressions denoting cost per occurrence are listed below. The complete list of variable symbols appears on page V-7 following the list of expressions for each operation. All coefficients are in dollars.

COSTS PER OCCURRENCE (IN DOLLARS) OF SELECTED HOUSEHOLD MAINTENANCE OPERATIONS

1. Painting Exterior Surfaces - $C_1 = A\,[b\,(.22\,x + .44y) + .03d]$

A = Average total surface area of structure in square feet
b = Percent of householders preferring to engage a contractor
d = Percent of householders preferring to "do-it-yourself"
x = Percent of householders to whom price is a prime consideration
y = Percent of householders to whom price is not a prime consideration (or who prefer to employ union labor)

2. Painting Exterior Trim Only - $C_2 = Wb\,(20\,x + 10y) + Wd$

W = Number of windows or doors (or other objects in units of 32 Sq. Ft. each)

3. Painting Interior Surfaces - $C_3 = R\,[\,(110\,x + 55y)b + 15d]$

R = Number of rooms per household

4. Washing Walls - $C_4 = Aw\,(.05p + .03L)$

Aw = Area of walls considered
P = Percent of jobs contracted by residents
L = Percent of jobs contracted by landlords of large multi-unit buildings

5. Washing Windows - $C_5 = 1.25$ wb

w = Number of windows in structures

6. Maintaining Air-Conditioners - Window Units $C_6 = d + 13.50$ PM + 65 RC

PM = Percent of householders who have a contractor perform preventive maintenance

RC = Percent of householders who take no action until the unit fails

7. Maintaining Air-Conditioners - Central, Private Residence

$C_7 = .40d + 25b$

8. Maintaining Air-Conditioners - Central, Multi-Unit Buildings

$C_8 = 50$

9. Dry-Clean Draperies

$C_9 = D\ (.04d + .12b)$

D = Area of draperies - Square feet

10. Dry-Clean Carpeting

$C_{10} = .13\ K$

K = Area of carpeting - Square feet

11. Shampoo Carpeting

$C_{11} = K\ (.11b + .071 + .04d)$

12. Shampoo Furniture

$C_{12} = 45b + 3d$

13. Wash Hard Surface Floors

$C_{13} = .04\ Fb$

Af = Area of floors - Square feet

List of unknowns in cost per occurrence expressions

A = Average total surface area per structure (sq. ft.)

b = Percent of householders preferring to engage a contractor

d = Percent of householders preferring to "do-it-themselves"

x = Percent of householders to whom the lowest price is of prime importance (or prefer non-union)

y = Percent of householders to whom price is not a prime consideration (or prefer union)

W = Average number of windows and doors per structure

D = Average area of draperies (sq. ft.)

K = Average area of carpeting (sq. ft.)

R = Average number of rooms per housing unit

AW = Average area of walls considered for washing (sq. ft.)

w = Average number of windows per structure

PM = Percent of householders who have a contractor perform preventive maintenance on air-conditioners

RC = Percent of householders who take no action until their air-conditioner fails

F = Average area of hard surface floors

P = Percent of jobs contracted by residents

L = Percent of jobs contracted by landlords

4. ANNUAL COSTS PER MAJOR OPERATION IN THE PENJERDEL AREA AROUND MID-1969 WERE IN THE TEN MILLION TO FIFTY MILLION DOLLAR RANGE

Applying the equations developed shown in Section 3 above, to data developed from the survey questionnaire returns and estimates of the extent of typical operation occurrences, has resulted in soiling costs of approximately 2 million to 56 million dollars per year for major operations in the PENJERDEL area. The data were 1969 cost and population data and data based on the early 1970 administering of the survey questionnaire.

These cost results, and the values of pertinent factors used in the cost equations are given in Exhibit IX, following this page. An operation like washing floors, though contracted out only 6% of the time, has relatively a high annual cost because of the high annual frequency of performing the operation and because just about everyone does it or has it done. The 6% contracted out portion of this operation is likely to be a mixture of domestic servants and apartment contracting. The costs used were for contracting at $0.04 per square foot and is liable to be inflating the figure. The $40 million should probably be taken as an upper bound.

Do-it-yourself operations on painting, shampooing, etc., do include the cost of supplies. However, these costs are one-tenth to one-twentieth the contracted unit cost, so that the "contracted" households column of Exhibit IX provides a quick reference to the extent of the costly part of operations as performed in the PENJERDEL area. Some examples of zonal cost projections are shown on the second page of Exhibit IX, with and without imputed costs for do-it-yourself identical to contract rates.

A

OPERATION	AVERAGE ANNUAL* FREQUENCY	DO-IT-YOURSELF FRACTION	TOTAL NO.** OF HOUSEHOLDS INVOLVED	DO-IT-YOURSELF HOUSEHOLDS
INSIDE			(MILLION)	(MILLION)
1. PAINT WALLS/CEILINGS	0.50	0.764	1.19	0.91
2. WASH WALLS	7.05	0.906	0.70	0.63
3. CLEAN AIR CONDITIONER AND FILTER REPLACEMENT	2.19	0.696	0.26	0.18
4. DRY CLEAN DRAPERIES	1.45	0.290	0.34	0.10
5. DRY CLEAN CARPETS	2.05	0.237	0.19	0.05
6. SHAMPOO CARPETING	2.97	0.862	0.72	0.62
7. SHAMPOO FURNITURE	4.62	0.890	0.22	0.20
8. WASH FLOORS	43.66	0.940	1.59	1.50
9. WASH WINDOWS	12.39	0.927	1.61	1.49
OUTSIDE				
10. PAINT WALLS	0.29	0.662	0.45	0.30
11. PAINT TRIM	0.36	0.631	1.05	0.66

*OF THOSE WHO PERFORM THE OPERATION AT ALL

**FROM RAND-MCNALLY TOTAL OF 1,650,000 MODIFIED BY SURVEY QUESTIONNAIRE FRACTION

EXHIBIT IX (1)

National Air Pollution Control Administration

TOTAL ANNUAL COSTS OF SOME CLEANING AND MAINTENANCE OPERATIONS IN THE PENJERDEL AREA

B

AL NO.** USEHOLDS VOLVED	DO-IT-YOURSELF HOUSEHOLDS	"CONTRACT" HOUSEHOLDS	TYPICAL JOB OPERATION	ESTIMATED ANNUAL COST
LLION)	(MILLION)	(MILLION)		(MILLION DOLLARS)
1.19	0.91	0.28	3 ROOMS	56
0.70	0.63	0.07	3 ROOMS	19
0.26	0.18	0.08		2
0.34	0.10	0.24	5 WINDOWS 150 SQ. FT. EACH	7
0.19	0.05	0.14	250 SQ. FT.	9
0.72	0.62	0.10	250 SQ. FT.	27
0.22	0.20	0.02	SOFA PLUS 2 CHAIRS	8
1.59	1.50	0.09	250 SQ. FT.	40
1.61	1.49	0.12	250 SQ. FT.	18
0.45	0.30	0.15	1800 SQ. FT.	31
1.05	0.66	0.39	14 WINDOWS AND DOORS	50

EXHIBIT IX (2)

(Millions of Dollars Annually)

	Total	Zone 1	Zone 2	Zone 3	Zone 4
Washing Windows Inside					
No imputed costs	17.9	5.3	5.8	3.5	3.3
Imputed at contract rates	241.	96.	55.	49.	41.
Washing Windows Outside					
No imputed costs	19.6	3.9	6.1	4.2	5.4
Imputed at contract rates	155.	59.	31.	34.	31.
Washing Floor Surfaces					
No imputed costs	39.9	20.3	12.2	4.7	2.7
Imputed at contract rates	657.	308.	156.	120.	73.

5. UNIT COST DATA SOURCES ARE SUMMARIZED

Unit cost data sources are summarized in the section. In addition, comments on the job cost estimating methods are included.

Data Sources

- Bureau of the Census
  Report # C50-67A Parts 1 and 2 - Residential Alterations and Repairs
  1967 Annual Report - Issued February 1969

  Lists annual expenditure by property owners for maintenance and repairs to residential properties. The report was discussed in depth with a statistician at the Census Bureau's construction statistics division. National data appears to be quite reliable, with a relative standard error of 4 - 6% for the painting expenditures. The painting category includes expenditures for both inside and outside painting and wall papering, and for both contracted and do-it-yourself work. Some rough estimates (by the Census Bureau statistician) of the average expenditure for painting per household were as follows:

- All U. S.	$37
- Northeast	45
- Northcentral	38
- South	28
- West	28

We discussed obtaining this information for the specific SMSA's in the PENJERDEL region. Since only an estimated 300 sampling units are included from those SMSA's, the relative standard error would be so large that it would be extremely unlikely that any variation in excess of the relative could be detected.

- National Association of Building Owners and Managers Office Building Experience Exchange Report, 1967

  Lists expenditures in cents per square foot by office building owner. Talked by phone with the man responsible for the preparation of this report.

  Most data are not applicable to residential structures. Of interest in the comparison of air-conditioned vs. non-air-conditioned buildings. Cleaning costs averaged $.06 per sq. ft. less in air-conditioned buildings. The figure was obtained from a questionnaire returned by about 450 building managers. It is not a true probability sample, since questionnaires are sent only to association members and response is on a voluntary basis.

- Institute of Real Estate Management Apartment House Experience Exchange

  Lists expenditures for in cents per sq. ft. by apartment house manager. Not a probability sample. (See Office Building Comment.) Categories are too broad to be of much value. Wall washing is included in the painting category. There is no way of knowing the proportion of total sq. ft. or rooms that actually incurred expenditures.

- Painting and Decorating Contractors of America Estimating Guide

  Lists specific application rates for various types of painting jobs. Much too detailed for this purpose. Six out of 10 painters contacted never heard of it. Two others don't use it at all, and two others use it only for special jobs.

- Painting Contractors

  Ten Painting Contractors were interviewed by telephone. Each was asked his basis for estimating various jobs (per room or per sq. ft.)

and his unit price. He was also asked to give his opinion of what the average price or range tended to be for various kinds of jobs. They were also asked whether they employed union labor. Average prices of union contractors were twice the average price of non-union contractors, regardless of location. Within each group, prices did not vary by more than 5¢/sq. ft.

- Dry-Cleaners

  Five were contacted. Predominant methods of pricing are:

  - Per pleat
  - Area (per sq. ft.)
  - Per panel

  After equating the methods, prices were all within a few cents per sq. ft.

  - 1 panel (90" typical drape) = 5-6 pleats = 30 sq. ft.

- Carpet Cleaners

  Four contacted. Prices range from $.10 - .13/sq. ft.

- Household Cleaning Contractors

  Three were contacted. Most specialize in smoke and water damage clean-up. Many small outfits with prices all over the place. The best source of data was the Servicemaster organization of Delaware Valley. I visited the manager for a personal interview. He showed me his estimating manuals. They seem carefully constructed and well documented. I have an invitation from Servicemaster's National Applications Manager to visit him if I happen to be in the Chicago area around the beginning of September.

- Real Estate Managers

  Out of 10 contacted, only 1 provided useful data on air-conditioning maintenance and other costs. Most referred me to cleaning contractors.

- Air-Conditioner Service Shops

  Two contacted. Prices were identical.

* * * *

Soiling costs of representative operations were summarized in this chapter, along with a description of the cost estimation method.

VI. OTHER FINDINGS FROM THE PERSONAL INTERVIEW QUESTIONNAIRES

Distribution of demographic characteristics of household heads reveal some marked inter-zone differences. (See Table 1 on the next page.)

> Educational level, mean family income and proportion of employment in white collar occupations all decrease significantly from Zone 1 down to Zone 4. Marital status and presence of children in the home does not vary significantly among zones.
>
> The proportion of non-white households is quite low in Zone 1, but reached a peak of 43% of all households in Zone 3, significantly higher than in Zone 4.

Other household and residence characteristics also are delineated among the four air pollution zones. (See Table 2 following Table 1.)

> PENJERDEL Region residents are primarily owners of houses rather than renters, even in Zone 4, and a

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TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF HOU

			Weighted Total	1
All Households	Number	-	---	471
	Percent*	-	100%	100%
Race				
White			79	93
Non-White			21	7
Education of Household Head				
Incomplete high school or less			40	31
Completed high school			34	34
Some college or more			24	34
Family Income of Household				
Under $6,000 annually			32	21
$6,000-$9,999 annually			29	27
$10,000 or more annually			31	40
Marital Status of Household Head				
Married with minor children at home			65	69
Married, no minor children at home			30	27
Not married			5	4
Occupation of Household Head				
White collar			33	43
Blue collar			40	37
Not in labor force			24	18

---

*Some categories may not total to 100% because of nonresponses and/or multiple respon

B

TABLE 1

DEMOGRAPHIC CHARACTERISTICS OF HOUSEHOLDS

		Weighted Total	Zone			
			1	2	3	4
Number	-	---	471	421	299	251
Percent*	-	100%	100%	100%	100%	100%
		79	93	78	57	70
		21	7	22	43	30
		40	31	37	48	68
		34	34	38	37	23
		24	34	22	13	7
		32	21	32	45	49
		29	27	25	36	32
		31	40	34	16	13
home		65	69	61	61	65
home		30	27	33	34	28
		5	4	6	5	7
		33	43	34	22	15
		40	37	37	43	45
		24	18	26	31	34

% because of nonresponses and/or multiple responses.

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TABLE 2

OTHER CHARACTERISTICS OF HOUSEHOLDS

			Weighted Total	1	
All Households	Number	-	---	471	
	Percent*	-	100%	100%	
Tenure of Household					
Own home			74	79	
Rent home			26	21	
Dwelling Units in Structure					
Single-family structure			51	62	
Multifamily structure			43	33	
Length of Residence in Household					
2 years or less			26	25	
3 to 5 years			17	17	
6 to 9 years			12	13	
10 years or more			45	45	
Outside Wall Surface Areas					
More than 10% painted wood			12	16	
More than 10% aluminum siding			8	10	
More than 75% brick or masonry			45	31	
Number of Household Pets					
No dogs			66	61	
1 or more dogs			34	39	
No cats			85	81	
1 or more cats			15	19	
No monkeys			100	100	1
1 or more monkeys			0	0	
Number of Rooms in Household**					
10 or fewer			36	27	3
More than 10			64	73	6
Mean Number of People Per Household			3.54	3.63	3.4

---

*Some categories may not total to 100% because of nonresponses and/or multiple responses.

**Closets and bathrooms/lavatories included in count.

TABLE 2

OTHER CHARACTERISTICS OF HOUSEHOLDS

B

		Weighted Total	Zone			
			1	2	3	4
Number	-	---	471	421	299	251
Percent*	-	100%	100%	100%	100%	100%
		74	79	74	67	64
		26	21	26	33	36
		51	62	42	44	43
		43	33	51	52	47
		26	25	25	26	28
		17	17	17	16	15
		12	13	13	10	10
		45	45	45	48	47
		12	16	15	6	3
g		8	10	8	4	3
ry		45	31	40	59	79
		66	61	69	74	73
		34	39	31	26	27
		85	81	90	92	90
		15	19	10	8	10
		100	100	100	100	100
		0	0	0	0	0
		36	27	33	45	59
		64	73	67	55	41
ld		3.54	3.63	3.47	3.40	3.54

0% because of nonresponses and/or multiple responses.
ncluded in count.

relatively high proportion in all zones live in single-family structures. (In many instances, of course, there may be row houses.)

Nearly half the householders in each zone have lived in their present residences for 10 years or more.

The number of persons per household remains nearly constant at about 3.5 in all zones, although the mean number of rooms (including closets and bathrooms/lavatories) decreases sharply from Zone 1 to Zone 4.

A surprisingly low proportion of households report having dogs as house-pets. Cats are even rarer and the study included no household with a pet monkey.

The low incidence and trivial mean frequency of "painting outside walls" that has been reported earlier is largely explained by the fact that very few residences have either painted wood or aluminum siding as more than 10% of their outside wall surfaces. The predominance of brick or masonry walls is evident.

It should be observed that where reliable recent estimates are available for distribution of demographic and residence characteristics in the PENJERDEL

Region, they match closely the figures shown in Tables 1 and 2. This lends strong support to our belief that the samples for this study are not biased, despite the lower than expected completion rates in Zones 3 and 4.

Attitudes toward the neighborhoods in which they live and toward air pollution follow predictable patterns among households in the several zones. (See Tables 3 and 4 on next pages.)

Perception of the dirtiness of their neighborhoods, perception of air pollution in the neighborhood as a serious problem, and awareness of specific pollutant sources all increase steadily from Zone 1 to Zone 4. There appears to be little or no relationship, however, between awareness of dirt or air pollution and the difficulty or ease of keeping their households clean and in good repair as respondents view it.

Desire to move away from their present neighborhoods is somewhat higher in Zones 3 and 4 than in Zones 1 and 2, but it appears highly probable that factors other than air pollution are strong influences here.

Distributions of householders among the six-factor segmentations are shown in Table 5 following Table 4.

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TABLE 3

ATTITUDINAL CHARACTERISTICS OF HOUSEHOLDS

			Weighted Total	1	2
All Households	Number	-	---	471	421
	Percent*	-	100%	100%	100%
Perceived Difficulty of Keeping Household Clean, in Good Repair**					
Very hard job			16	13	16
Fairly hard job			29	28	32
Fairly easy job			44	50	42
Very easy job			11	9	10
Perception of Neighborhood Lived In					
Extremely or fairly dirty			17	10	15
About average			30	25	30
Fairly clean			37	42	39
Very clean			16	23	16
Perception of Air Pollution in Neighborhood					
Serious problem			29	18	31
Minor annoyance			34	35	38
Not a problem			37	47	31
Awareness of Specific Pollutant Sources					
Yes			36	30	37
No			64	70	63
Considering Moving From Neighborhood					
Yes			19	17	19
No			81	83	81
Ever Wished To Move From Neighborhood					
Yes			46	41	43
No			54	59	57

---

*Some categories may not total to 100% because of nonresponses and/or multiple responses.

**Testimony of female head of household accepted where available (91% of cases); otherwise, male

TABLE 3

DINAL CHARACTERISTICS OF HOUSEHOLDS

B

	Weighted Total	Zone 1	Zone 2	Zone 3	Zone 4
-	---	471	421	299	251
-	100%	100%	100%	100%	100%
	16	13	16	18	16
	29	28	32	32	21
	44	50	42	38	47
	11	9	10	12	16
	17	10	15	25	34
	30	25	30	43	29
	37	42	39	29	27
	16	23	16	3	10
	29	18	31	39	51
	34	35	38	31	25
	37	47	31	30	24
	36	30	37	37	52
	64	70	63	63	48
	19	17	19	21	23
	81	83	81	79	77
	46	41	43	52	59
	54	59	57	48	41

f nonresponses and/or multiple responses.
where available (91% of cases); otherwise, male.

TABLE 4

REASONS FOR WANTING TO MOVE FROM NEIGHBORHOOD

	Zone 1	Zone 2	Zone 3	Zone 4
Respondents	471	421	299	251
Percent	100%	100%	100%	100%
Want to move	41	43	52	59
Seeking:				
Cleaner, fresher air	2	4	4	5
Specific housing desires	17	21	15	16
More attractive surroundings	5	9	15	19
Better quality of housing	4	7	8	10
More desirable neighbors	3	5	7	10
More grounds, outdoor space	4	5	7	7
Closer to jobs, schools, etc.	6	5	5	6
Safer neighborhood	*	2	3	11
More privacy	3	5	7	5
Lower rent, taxes	4	2	4	1
Warmer, healthier climate	3	2	1	*
Involuntary: must move	1	*	1	1
Other	8	5	5	7
Don't know	*	-	*	1

---

* = Less than one-half percent.

Columns add to more than totals shown because of multiple responses.

TABLE 5

FACTOR-SEGMENTATION OF HOUSEHOLDS

				Weighted Total	1	2
All Households		Number	-	---	471	421
		Percent*	-	100%	100%	100%
"Do-It-Yourself" Loading	≥ .40			44	56	40
	≥ .25			67	77	62
"Social" Loading	≥ .40			12	11	16
	≥ .25			39	36	43
"Dutiful" Loading	≥ .40			8	6	11
	≥ .25			35	31	38
"Proud" Loading	≥ .40			5	1	4
	≥ .25			24	16	21
"Hit-Or-Miss" Loading	≥ .40			4	4	4
	≥ .25			18	21	15
"Disinterested" Loading	≥ .40			1	1	1
	≥ .25			8	9	5
Not segmented				13	11	17

---

*Some categories may not total to 100% because of nonresponses and/or multiple responses.

TABLE 5

ACTOR-SEGMENTATION OF HOUSEHOLDS

B

	Weighted Total	Zone 1	Zone 2	Zone 3	Zone 4
-	---	471	421	299	251
-	100%	100%	100%	100%	100%
	44	56	40	35	26
	67	77	62	60	52
	12	11	16	10	12
	39	36	43	40	41
	8	6	11	8	12
	35	31	38	38	34
	5	1	4	8	14
	24	16	21	36	42
	4	4	4	3	1
	18	21	15	17	11
	1	1	1	3	1
	8	9	5	9	6
	13	11	17	10	22

f nonresponses and/or multiple responses.

Segment #4, "Do-It-Yourself" is by far the largest of the six, with 44% of all householders having a "highly significant" loading ($\geq .40$) on this factor. Only 1% of all householders have such a loading on Factor #6, "Disinterested."

It is noteworthy that the "Do-It-Yourself" segment is highest in Zone 1 and drops off sharply down to Zone 4. The "Hit-Or-Miss" segment shows this same inter-zonal pattern, while the proportion of householders in the "Proud" segment steadily increases from Zone 1 to Zone 4.

In terms of their reported behavior with respect to the 27 specific tasks, the segments tend to fall into three pairs--#3 and #5 ("Proud" and "Dutiful"); #4 and #1 ("Do-It-Yourself" and "Social"); and #2 and #6 ("Hit-Or-Miss" and "Disinterested").

As Table 5a, following this page, demonstrates, however, the higher than average rate of activity of #'s 3 and 5 and the lower than average rate of #'s 2 and 6 are reflected only in the routine tasks of washing windows and cleaning blinds, not in wall-papering or painting outside walls.

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TABLE 5a

RELATION OF SEGMENTS TO TASK FREQUENCIES

Task Number and Description	Weighted Total	Mean Annual Fre Segments 3 & 5	Segments 1 & 4
2 - Wallpapering	0.09	0.09	0.11
14 - Washing windows (inside only)	12.07	14.39	12.05
15 - Cleaning venetian blinds/shades	6.19	8.53	5.81
16 - Painting outside walls	0.08	0.06	0.10
20 - Washing windows (outside only)	5.41	5.94	5.70

TABLE 5a

RELATION OF SEGMENTS TO TASK FREQUENCIES

B

	Weighted Total	Mean Annual Frequencies		
		Segments 3 & 5	Segments 1 & 4	Segments 2 & 6
	0.09	0.09	0.11	0.11
nside only)	12.07	14.39	12.05	8.90
linds/shades	6.19	8.53	5.81	2.10
lls	0.08	0.06	0.10	0.08
utside only)	5.41	5.94	5.70	3.53

Only rarely is any one person engaged in the task of keeping the residence clean and in good repair, either inside or outside. (See Table 6 on the next page.)

> On the average, in half of the households the male head helps with the inside work and in almost as many households the female head helps with the outside chores. Children make a significant contribution both inside and outside, while regular hired help is rare even in Zone 1.
>
> There are no surprising differences among the zones except, perhaps, the indication that male heads are most active in the outside work in Zone 1.

Many householders attribute perceived increases in the frequency and/or cost of performing the specific cleaning tasks to the direct effects of air pollution. (See Table 7 following Table 6.)

> However, as it has been noted earlier in Chapter IV of this report, there are only a few consistent patterns across zones in these perceived increases and they are primarily concerned with low-cost, do-it-yourself tasks.

A

TABLE 6

BEHAVIORAL CHARACTERISTICS OF HOUSEHOLD

			Weighted Total	1	2
All Households	Number	-	---	471	42
	Percent*	-	100%	100%	10
Who Keeps INSIDE of Home Clean and in Good Repair					
Male head of household			49	49	49
Female head of household			90	91	89
Children			22	23	1
Regular hired help			6	8	7
Occasional hired help			13	15	16
Other			8	9	8
Who Keeps OUTSIDE of Home Clean and in Good Repair					
Male head of household			63	71	60
Female head of household			46	50	44
Children			20	26	18
Regular hired help			6	9	6
Occasional hired help			16	13	24
Other			16	12	16

---

*Some categories may not total to 100% because of nonresponses and/or multiple responses.

TABLE 6

BEHAVIORAL CHARACTERISTICS OF HOUSEHOLDS

B

		Weighted Total	Zone			
			1	2	3	4
Number	-	---	471	421	299	251
Percent*	-	100%	100%	100%	100%	100%
n and in						
		49	49	49	44	55
		90	91	89	90	90
		22	23	18	23	20
		6	8	7	1	2
		13	15	16	9	9
		8	9	8	7	6
ean and in						
		63	71	60	54	58
		46	50	44	37	57
		20	26	18	16	14
		6	9	6	2	5
		16	13	24	15	14
		16	12	16	22	18

100% because of nonresponses and/or multiple responses.

TABLE 7

PROPORTIONS REPORTING THAT AIR POLLUTION AFFECTS FREQUENCY AND/OR COST OF 27 TASKS

A

		Weighted Total	Zo	
			1	2
	Number -	---	471	421
All Households	Percent -	100%	100%	100%
OPERATION/TASK				
Inside				
# 1	Painting walls/ceilings	15	13	21
# 2	Wall-papering	7	4	10
# 3	Washing walls	13	11	15
# 4	Replacing air conditioner filter	7	5	10
# 5	Replacing furnace filter	6	4	9
# 6	Cleaning/oiling air conditioner	4	1	7
# 7	Cleaning furnace	5	4	10
# 8	Dry cleaning draperies	7	5	11
# 9	Dry cleaning carpeting	4	2	7
#10	Shampooing carpeting	12	9	14
#11	Shampooing furniture	4	3	5
#12	Washing floor surfaces	19	13	24
#13	Waxing floor surfaces	8	5	13
#14	Washing windows (inside)	25	18	28
#15	Cleaning venetian blinds/shades	13	8	13
Outside				
#16	Painting outside walls	12	13	17
#17	Painting outside trim	23	18	29
#18	Cleaning/repairing screens	19	14	35
#19	Cleaning/repairing awnings	41	33	42
#20	Window washing (outside)	24	20	28
#21	Cleaning/repairing storm windows	28	26	34
#22	Washing automobiles	17	10	35
#23	Waxing automobiles	10	9	17
#24	Cleaning outdoor furniture	8	6	10
#25	Maintaining driveways/walks	5	4	8
#26	Cleaning gutters	5	5	9
#27	Maintaining shrubs/flowers, etc.	2	2	4

TABLE 7

RTIONS REPORTING THAT AIR POLLUTION AFFECTS FREQUENCY AND/OR COST OF 27 TASKS

B

		Weighted Total	Zone 1	Zone 2	Zone 3	Zone 4
er	-	---	471	421	299	251
nt	-	100%	100%	100%	100%	100%
		15	13	21	14	16
		7	4	10	5	16
		13	11	15	15	16
filter		7	5	10	6	10
		6	4	9	3	6
ioner		4	1	7	5	4
		5	4	10	3	6
		7	5	11	6	8
		4	2	7	3	3
		12	9	14	12	19
		4	3	5	2	6
		19	13	24	18	32
		8	5	13	8	12
		25	18	28	27	42
shades		13	8	13	20	24
		12	13	17	6	6
		23	18	29	23	25
s		19	14	35	12	17
s		41	33	42	46	58
		24	20	28	25	36
windows		28	26	34	26	26
		17	10	35	12	14
		10	9	17	8	3
		8	6	10	10	10
ks		5	4	8	4	8
		5	5	9	4	2
s, etc.		2	2	4	3	2

The data reported here in Chapter VI are, of course, only a fraction of those available from the punched cards and the questionnaires themselves. While they serve to highlight and document the major findings from the study, it may be both informative and useful to examine other data that can be obtained from additional tabulations and cross tabulations of information obtained.

To further this end, we are transmitting with this report all of the study questionnaires, a set of the punched cards, and copies of coding specifications and card layouts for whatever use of them you may desire.

APPENDIX A

APPENDIX A

SURVEY QUESTIONNAIRE

This appendix includes the Personal Interview Questionnaire, and displays the Item Statements for the Factor Segmentation Card Sort.

National Analysts, Inc.
1015 Chestnut Street
Philadelphia, Pa.

Study #1-985
Winter, 1970
Bureau of Budget #: 85-S69010
Approval Expires: 2/28/1970

CLEANING AND MAINTENANCE STUDY

Segment #________________

Household #________________

Respondent #________________

Time interview began_____A.M._____P.M.

Time interview ended_____A.M._____P.M.

Respondent's name____________________________ Phone #________________

Address____

City____________________ State__________ Zip code________

Interviewer's name____________________________ S.S. #________________

Date________________

A. RESIDENCE CHARACTERISTICS

1. About how long have you lived at this address?

Less than 1 year	1
1 - 2 years	2
3 - 5 years	3
6 - 9 years	4
10 years and more	5

2. At what address did you live before you moved here?

_______________ Street and Number _______________ City _______________ State

3. How did you happen to move here where you live now?

4. Do you own this residence, or do you rent it?

Own	1
Rent	2

5. How many other families, if any, live in this building?

Number of Families _______

6. (SHOW CARD A) Please tell me how many rooms, of what types, you have here in your own residence?

Living room		Rumpus room	
Dining room		Utility room	
Bedroom		Closet	
Kitchen		Unfinished basement	
Family room		Unfinished attic	
Full bathroom		Other_______________	
Lavatory		Other_______________	

7. How many inside stairways, if any, do you have?

Number of Stairways ______

8. About how many square feet of living space do you have here in your own residence? PROBE: Just your best guess? PROBE: Can you tell me the approximate overall measurements of the residence (include all floors)?

______ X ______ Dimensions (feet) OR ______ No. of sq. ft.

9a. What kind of a heating system do you have here?

☐

b. What kind of fuel does this use -- oil, gas, coal or what?

Oil	1
Gas	2
Coal	3
Electricity	4
Other (SPECIFY)	0

10a. How many fireplaces, if any, do you have which you actually use?

Number of Fireplaces Used ______

b. (UNLESS NO FIREPLACES USED) What do you burn in this (these) fireplace(s)? (CIRCLE ALL FUELS MENTIONED)

Coal	1
Wood	2
Gas	3
Other (SPECIFY)	0

11a. When meals are being cooked, is the kitchen usually closed off from other areas of your residence?

Skip to Q.12	Yes	1
	No	2

b. Why isn't the kitchen closed off when meals are being cooked?

12. What kind of air-conditioning units, if any, do you have in your home? How many altogether?

None	0
One window unit	1
Two-plus window units	2
Central system	3

13. How many of the people living in this residence, if any, smoke...? (READ ALOUD AND RECORD NUMBER - INCLUDING NONE - FOR EACH TYPE OF TOBACCO)

...Cigarettes ____________

...Cigars ____________

...Pipe ____________

14a. How many rooms in your residence, if any, have any painted walls?

Number of Rooms ____________

b. How many rooms in your residence, if any, have any paneled walls?

Number of Rooms ____________

c. How many rooms in your residence, if any, have any wall-papered walls?

Number of Rooms ____________

15. What kinds of flooring materials do you have in your home -- hardwood, linoleum, vinyl tile, etc.? How many rooms have each type of flooring? (RECORD IN COLUMN A.) How many rooms with each type of flooring are covered with large rugs or wall-to-wall carpeting? (RECORD IN COLUMN B.)

	COL. A	COL. B
Hardwood		
Vinyl tile		
Linoleum		
Porcelain tile		
Other (SPECIFY)		

16a. (SHOW CARD B) Thinking now about the outside of your residence, with what kinds of materials are the outside walls finished? PROBE: Any other materials? (CIRCLE ALL MENTIONED IN COLUMN A BELOW)

b. (ASK FOR EACH MENTIONED IN Q. 16a, IF MORE THAN ONE, AND RECORD IN COLUMN B BELOW) About what proportion of the entire outside wall surface is finished with ______________ ?

	COL. A	COL. B
Painted wood	1	%
Stained wood	2	%
Wood shingle	3	%
Asbestos shingle	4	%
Aluminum siding	5	%
Brick or masonry	6	%
Other (SPECIFY)	0	%

c. (IF PAINTED WOOD AND/OR ALUMINUM SIDING CIRCLED) What color is the painted wood and/or the aluminum siding?

☐

17. (ASK EVERYBODY) What color is the outside trim for window frames, outside shutters, etc.?

☐

18a. About how many windows does your home have? PROBE: Are you counting the basement, bathroom, etc.?

Number of windows ______________

b. For how many of these, if any, do you use removable storm windows in the winter-time?

Number of Removable Storm Windows ______

19. Does your home have any sliding glass doors or glass french windows that open to the out-of-doors? How many altogether?

Number of Glass Doors (French Windows) ______

20a. Does your home have any outdoor porches, terraces, balconies, stairways, fire escapes, etc.?

	Yes	1
Skip to Q. 21a	No	2

b. (IF YES) Are any of these screened, or not?

Not screened	1
Wire screen	2
Glass jalousies	3
Other (SPECIFY)	0

c. About how many square feet of space do you estimate are included in these outdoor porches, balconies, stairways, etc.?

Number of square feet ____________

21a. Do you have any outside awnings, either in the summer-time or all year 'round?

	Yes	1
Skip to Q. 22a	No	2

b. What materials are the awnings made of?

Canvas	1
Aluminum	2
Other (SPECIFY)	0

22a. Do you have a garage that you have to take care of? Is it one-car or two-car?

Skip to Q. 23a	No garage	1
	One-car garage	2
	Two-car garage	3

b. (UNLESS NO GARAGE) Is the garage part of the house, or attached to the house, or is it a separate structure?

Part of the house	1
Attached	2
Separate	3

23a. Do you have to take care of the roof of your home?

	Yes	1
Skip to Q. 24a	No	2

b. (IF YES) What material is the roof of your home made of?

Asbestos shingle	1
Wood shingle	2
Tile	3
Other (SPECIFY)	0

c. Do you have gutters and drains on your roof that you have to take care of?

Yes	1
No	2

24a. Do you have any outdoor space -- paved areas, walks, driveway, lawn, garden, trees, shrubbery, etc. -- that goes with your own residence and that you have to take care of?

	Yes	1
Skip to Q. 25	No	2

b. (IF YES) Do you have...? (READ ALOUD AND CIRCLE ALL THAT APPLY)

...Grass lawn	1	...Driveway	6
...Trees	2	...Walk(s)	7
...Shrubs or hedges	3	...Paved area(s)	8
...Flower garden	4	...Outdoor furniture	9
...Vegetable garden	5		

c. Are there any other structures or anything else on the property that you have to take care of? Please tell me what they are?

d. About how much outdoor space do you have altogether? PROBE: Just your best guess? PROBE: Can you tell me the approximate overall measurements of your property?

______ X ______ OR ______________
Dimensions (feet) No. of sq. ft.

25. How do you feel about the job of keeping your residence clean and in good repair? Would you say it is...? (READ ALOUD AND CIRCLE ONLY ONE EACH FOR MALE HEAD OF HOUSEHOLD AND FOR FEMALE HEAD OF HOUSEHOLD. BE SURE TO RECORD ANSWERS OF EACH IN PROPER COLUMN BELOW)

	Male Head	Female Head
...a very hard job for you	1	1
...a fairly hard job for you	2	2
...a fairly easy job for you	3	3
...a very easy job for you	4	4

B. BASIC HOUSE CLEANING SEGMENTATION

26. Now I want you to think about your own housekeeping attitudes and activities. Here are a number of statements that other residents of this area have made about themselves. Please read each of these cards carefully. I want you to sort them for me in a way that I will tell you about.

(MALE HEAD OF HOUSEHOLD AND FEMALE HEAD OF HOUSEHOLD SHOULD EACH MAKE AN INDIVIDUAL CARD SORT. THEY SHOULD WORK SIMULTANEOUSLY, BUT APART FROM ONE ANOTHER SO THAT THEY DO NOT ASSIST OR INFLUENCE ONE ANOTHER)

(HAND A SHUFFLED DECK OF STATEMENT CARDS TO EACH RESPONDENT - BLUE FOR MALE, PINK FOR FEMALE - AND GIVE INSTRUCTIONS FOR TWO-STAGE CARD SORT. RECORD STATEMENT NUMBERS IN PROPER BOXES ON THE TWO FOLLOWING PAGES, AGAIN BLUE FOR MALE AND PINK FOR FEMALE, AS LEGIBLY AS POSSIBLE, AFTER SORTS ARE COMPLETED)

C. INTERIOR CLEANING AND MAINTENANCE

27a. (SHOW CARD C) Who does the various kinds of work needed to keep the inside of your home clean and in good repair? PROBE: Anyone else? (CIRCLE ALL MENTIONED)

Male head of household	1
Female head of household	2
Children	3
Regular hired help	4
Occasional hired help	5
Other (SPECIFY)	0

b. (IF REGULAR HIRED HELP CIRCLED IN 27a) About how many hours per week do you have regular hired help?

Hours per week________

c. What kinds of inside cleaning or repair work does this regular hired help do? PROBE: Anything else?

☐

d. (IF OCCASIONAL HIRED HELP CIRCLED IN 27a) About how often do you have occasional hired help?

________ No. of times per

Week	1
Month	2
Year	3

e. What kinds of inside cleaning or repair work does this occasional hired help do? PROBE: Anything else?

☐

28. Now I want to ask you about a number of specific inside cleaning and maintenance jobs that other residents in this area have told us about. For each one of these jobs, I want you to tell me about your experience with them, if you have had any, while you have been living here in this residence. (SHOW CARD D.) These are the questions about each job:

a. When did you do this job last time, or have it done by somebody else?
b. When do you expect to do this job next time, or have it done for you?
c. Generally speaking, how often is this job done?
d. Who usually does this job?
e. How much does this job cost you for labor and supplies?
f. (If it applies) How much could you save by doing this job yourself?

INTERIOR CLEANING

Specific Job	When Was It Done Last	When Expect To Do Next Time	Average Frequency
01 Painting walls or ceilings	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
02 Wall-papering	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
03 Washing walls	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
04 Replacing air-conditioner filter	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
05 Replacing furnace air filter	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
06 Cleaning and oiling air-conditioner	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
07 Cleaning furnace or heating system	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
08 Dry-cleaning draperies	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
09 Dry-cleaning carpeting	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
10 Shampooing carpeting	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
11 Shampooing furniture	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
12 Washing floor surfaces	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
13 Waxing floor surfaces	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
14 Washing windows (inside only)	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3
15 Cleaning venetian blinds/shades	___ # of Weeks 1 Months 2 ago Years 3	___ # of Wks. 1 Mos. 2 from now Yrs. 3	Once every ___ # Wks. 1 Mos. 2 Yrs. 3

AND MAINTENANCE

Who Usually Does It	Basis For Cost Extent Of Job	Cost Of Supplies	Cost Of Labor	Do-It-Yourself Savings
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$
H.H. Member 1 Hired help 2 Other_________ 0		$	$	$

D. EXTERIOR CLEANING AND MAINTENANCE

29a. (SHOW CARD C) Who does the various kinds of work needed to keep the outside of your home clean and in good repair? PROBE: Anyone else? (CIRCLE ALL MENTIONED)

Male head of household	1
Female head of household	2
Children	3
Regular hired help	4
Occasional hired help	5
Other (SPECIFY)	0

b. (IF REGULAR HIRED HELP CIRCLED IN 29a) About how many hours per week do you have regular hired help?

Hours per week__________

c. What kinds of outside cleaning or repair work does this regular hired help do? PROBE: Anything else?

☐

d. (IF OCCASIONAL HIRED HELP CIRCLED IN 29a) About how often do you have occasional hired help?

		Week	1
__________ No. of times	per	Month	2
		Year	3

e. What kinds of outside cleaning or repair work does this occasional hired help do? PROBE: Anything else?

☐

30. Now, for each of a number of specific outside cleaning and maintenance jobs, I want you to tell me about your experience with them, if you have had any, while you have been living here in this residence. (SHOW CARD D)

a. When did you do this job last time, or have it done by somebody else?
b. When do you expect to do this job next time, or have it done for you?
c. Generally speaking, how often is this job done?
d. Who usually does this job?
e. How much does this job cost you for labor and supplies?
f. (If it applies) How much could you save by doing this job yourself?

EXTERIOR CLEANING

Specific Job	When Was It Done Last	When Expect To Do Next Time	Average Frequency
01 Painting outside walls	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
02 Painting outside trim	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
03 Cleaning/repairing screens	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
04 Cleaning/repairing awnings	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
05 Washing windows (outside only)	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
06 Cleaning/repairing storm windows	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
07 Washing automobiles	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
08 Waxing automobiles	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
09 Cleaning outdoor furniture	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
10 Maintaining driveways, walks	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
11 Cleaning gutters	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3
12 Maintaining shrubs, flowers, etc.	Weeks 1 ____ Months 2 ago # of Years 3	Wks. 1 ____ Mos. 2 from # of Yrs. 3 now	Once Wks. 1 every____ Mos. 2 # Yrs. 3

AND MAINTENANCE

Who Usually Does It	Basis For Cost Extent Of Job	Cost Of Supplies	Cost Of Labor	Do-It-Yourself Savings
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$
H.H. Member 1 Hired help 2 Other________ 0		$	$	$

E. NEIGHBORHOOD CLEANLINESS

31a. Are you now considering moving from where you live here to some other residence?

	Yes	1
Skip to Q. 32a	No	2

b. (IF YES) Where are you thinking about moving to? PROBE FOR AS MUCH SPECIFIC INFORMATION AS POSSIBLE

c. Why are you thinking about moving from here?

(SKIP TO Q. 33a)

32a. Have you ever wished that you could move from where you live here to some other residence?

	Yes	1
Skip to Q. 33a	No	2

b. (IF YES) What are your main reasons for wanting to move from here? PROBE: Anything else?

ASK EVERYBODY

33a. Compared to other neighborhoods that you know about, would you say that this neighborhood where you live is...? (READ ALOUD, AND CIRCLE ONLY ONE)

...Extremely dirty	1
...Fairly dirty	2
...About average	3
...Fairly clean	4
...Extremely clean	5

b. Why do you say that? PROBE: Anything else?

c. (IF EXTREMELY DIRTY OR FAIRLY DIRTY) What do you think is primarily responsible for making this neighborhood dirty? PROBE: Anything else?

34a. Do you feel that air pollution is a problem in this neighborhood, or not? Is it a serious problem or only a minor annoyance?

Yes, serious problem	1
Yes, minor annoyance	2
No, not a problem	3

b. What makes you say that? PROBE: Anything else?

c. Are you thinking of air pollution as smelly gases and vapors, or as little particles of soot or other dirt?

Gases and vapors	1
Particles of soot	2
Both	3
Other (SPECIFY)	0

d. Are there any particular factories or smoke stacks or other things around here that you feel are responsible for most of the air pollution in the form of soot or dirt that happens in this neighborhood?

	Yes	1
Skip to Q. 35a	No	2

e. What factories, etc. do you feel are most responsible for this air pollution?

f. (IF YES) Where are they located? (GET SPECIFIC INFORMATION)

35a. Now just a few more questions before we wind up this questionnaire with some statistical information about you and your family. Let's review the list of specific cleaning and maintenance jobs we talked about earlier with which you have had experience while you have been living here in this residence. For each one, I want you to tell me whether or not the amount of cleaning or maintenance that has to be done is affected by the air pollution in the form of soot that is here in this neighborhood. (READ EACH ITEM AND RECORD BELOW AND ON FOLLOWING PAGE)

b. Then, for each job where you feel that air pollution does have an effect I would like to get your best estimate of the increase in the frequency with which the job has to be done because of air pollution, or the increase in cost of the job when it is done because air pollution has made things dirtier, or both. (READ AGAIN EACH ITEM RESPONDENT SAYS IS AFFECTED BY AIR POLLUTION AND ASK ABOUT INCREASE IN FREQUENCY AND INCREASE IN COST PER OCCASION. GET PERCENTAGE ESTIMATES FOR INCREASES WHEREVER POSSIBLE AND RECORD BELOW AND ON FOLLOWING PAGE)

EFFECTS OF AIR POLLUTION

Specific Job	No Experience	Does It Affect		Increased Frequency	Increased Cost Per Occasion
		Yes	No		
01 Painting walls or ceilings		1	2	%	%
02 Wall-papering		1	2	%	%
03 Washing walls		1	2	%	%
04 Replacing A-C filter		1	2	%	%
05 Replacing furnace filter		1	2	%	%
06 Cleaning and oiling A-C		1	2	%	%
07 Cleaning heating system		1	2	%	%
08 Dry-cleaning draperies		1	2	%	%
09 Dry-cleaning carpeting		1	2	%	%
10 Shampooing carpeting		1	2	%	%
11 Shampooing furniture		1	2	%	%

EFFECTS OF AIR POLLUTION

Specific Job	No Experience	Does It Affect		Increased Frequency	Increased Cost Per Occasion
		Yes	No		
01 Washing floor surfaces		1	2	%	%
02 Waxing floor surfaces		1	2	%	%
03 Washing windows (inside)		1	2	%	%
04 Cleaning venetian blinds		1	2	%	%
05 Painting outside walls		1	2	%	%
06 Painting outside trim		1	2	%	%
07 Cleaning/repairing screens		1	2	%	%
08 Washing windows		1	2	%	%
09 Cleaning storm windows		1	2	%	%
10 Washing automobiles		1	2	%	%
11 Waxing automobiles		1	2	%	%
12 Cleaning outdoor furniture		1	2	%	%
13 Maintaining driveway, walks		1	2	%	%
14 Cleaning gutters		1	2	%	%
15 Maintaining shrubs, etc.		1	2	%	%
16 Cleaning/repairing awnings		1	2	%	%

F. HOUSEHOLD AND PERSONAL CHARACTERISTICS

36a. Counting any children living with you, how many people altogether reside in your home?

____

b. How many pet dogs, cats, or monkeys, if any, do you have that spend at least part of the time in the home?

Dogs ______

Cats ______

Monkeys ______

DEMOGRAPHIC CHARACTERISTICS ON THIS PAGE APPLY TO THE HEAD OF THE HOUSEHOLD

c. Sex

Male	1
Female	2

d. Age (Use Card)

18-20	1
21-24	2
25-29	3
30-34	4
35-39	5
40-44	6
45-49	7
50-54	8
55-59	9
60-64	0
65 or older	V

e. Education (Circle highest grade completed)

Grammar school	1	2	3	4	5	6	7	8
High school	1	2	3	4				
College	1	2	3	4	5 or more			

f. Occupation and industry of head of household:

________________________________ ☐

g. Marital status:

Never married	1
Widowed, divorced, separated	2
Married	3

h. (IF EVER MARRIED) Number of children at home. (CIRCLE ONE NUMBER IN EACH LINE)

Under 6	0	1	2	3	4 or more
6-11	0	1	2	3	4 or more
12-17	0	1	2	3	4 or more
18 or older	0	1	2	3	4 or more

i. Total family income: (SHOW INCOME CARD. CIRCLE ONE CODE NUMBER. WRITE "EST" IF ESTIMATE)

a - 1	d - 4	g - 7
b - 2	e - 5	h - 8
c - 3	f - 6	i - 9

j. Race

White	1
Negro	2
Oriental	3
Puerto Rican	4
Other (SPECIFY)	0

k. (IF "1" IN j, SHOW NATIONALITY CARD AND SAY:) We are interested in the ways a person's cultural background is related to house-maintenance. Which of the nationalities on this card are included in the past two generations of your family. Just give me the numbers. (CIRCLE ALL NUMBERS MENTIONED)

1 2 3 4 5 6 7 8 9

10-(SPECIFY)__________________________

____

ATTITUDE STATEMENTS

01. Our residence is worth more if we keep it clean and in good repair.

02. Painters and plumbers and carpenters cost so much these days that we have to do a lot of work ourselves.

03. The kids get a great kick out of helping me do things like shampooing the living room rug.

04. I hate to feel that my next-door neighbor's home is cleaned more often than mine.

05. We try to repair anything that goes wrong in our home as soon as possible after it happens.

06. I used to spend more time cleaning when the children were growing up. Now that they've left home, we don't go to much effort about cleaning.

07. There's so much dirt in this neighborhood that most people don't seem to mind if your house needs a new coat of paint.

08. My husband (wife) doesn't make much of a fuss about housekeeping as long as his (hers) things are kept neatly.

09. I hate to throw anything away, so we always have stacks of magazines or newspapers or letters that have to be stored away somewhere.

10. Outside painting is too much of a job for an inexperienced man. We prefer to have a professional painter do it.

11. It seems to me that we're always painting or patching some room in the house.

12. We just love a shiny automobile, so we wash it practically every week whether it really needs it or not.

13. Fortunately for me, I'm great at not being able to see dirt.

14. Some women really seem to enjoy house cleaning, but I (my wife) is not one of them.

15. I don't mind dust-bunnies under my bed as long as the living room looks neat.

16. Most people in this neighborhood keep their homes really clean and in good repair.

17. My young children keep the house dirty no matter how often it is cleaned.

18. Both of us work, so that most cleaning has to wait until we can get to it.

19. I don't mind dusting and making the beds, but I need help for the heavy cleaning.

20. My mother was a very strict housekeeper and I guess I learned from her.

21. I like to work with my hands on do-it-yourself jobs around the house.

22. I would be more interested in cleaning if things stayed clean longer.

23. All cleaning in this house is done according to a regular schedule, regardless of anything else.

24. I don't think a man should spend his hard-earned vacation working on things around the house.

25. We must keep our house clean to prevent rats and vermin.

26. House cleaning is just like cooking. It's something a woman has to do.

27. We get the house repainted when we can afford to, which may be some time after it really needs repainting.

28. Working outside the house is fun. I enjoy tending the flowers, or even mowing the grass.

29. Since we got air-conditioning, our cleaning problems are considerably easier than they used to be.

30. Washing clothes at home is a real problem unless you have an automatic dryer. Clothes I hang outside are dirty again before they get dry.

31. Good housekeepers are born that way. People cannot be trained to become good housekeepers.

32. We made a real point of teaching the children to keep their rooms neat and clean.

33. My great-grandmother would have a fit if she could see how we keep our house.

34. If the typical place of business looked like our house usually does, they wouldn't do a dime's worth of business.

35. There's not much point today in hiring outside help to do some of your housework. They're interested only in the money they make--not in the job they do.

36. Most friends and neighbors don't care how you keep your house as long as they enjoy themselves when they visit you.

37. I am sometimes very upset when I visit my friends' homes and see how well-kept they are.

38. We do as good a job as we can of keeping our house clean, but the dirt always seems to get ahead of us.

39. I know that house cleaning is an important responsibility, but other activities that we have are important, too.

40. Most people judge a woman first by how well she keeps her house clean.

41. We entertain a lot, so it's important that our house look its best all the time.

42. A husband has to work hard at his job away from home. I think a wife should work hard at her job in the house.

43. Most people can only see what our house looks like from the outside, so it doesn't matter so much how it looks inside.

44. We usually spend extra effort only on the parts of the house that visitors can see.

45. It's important to get house cleaning done and over with so that we can do the other things we really want to do.

46. We usually let housekeeping chores pile up for days or weeks at a time until suddenly we get upset about it and then go all-out to get them done.

47. You can't try to keep cats or dogs around the house as pets and still have a tidy household.

48. We prefer to live in our house instead of treating it as something to show off to our friends.

49. There is nothing I enjoy more than having a clean, tidy house that will impress my friends and neighbors.

50. If there is no one but yourself to see how you keep house, you sort of lose the urge to keep it as clean as it might be.

51. My wife (husband) and I don't really agree about the importance of keeping our house clean and in good repair. She's (he's) one way--I'm the other.

52. The cost of having a home today is so high that it's a real shame not to keep it looking clean and nice.

53. I (my spouse) is allergic to dust, so we keep the house as clean as possible.

54. It's not the amount of money you spend that keeps a house clean--it's the amount of "elbow grease" you use.

55. If any repairs that are needed are not taken care of right away, they just get more expensive to fix later on.

56. I'm not happy unless the home smells clean.

APPENDIX B

TABULAR APPENDIX

This appendix contains the mean annual frequencies of task performance and standard errors of means for weighted total of households in PENJERDEL region and for households in each air pollution zone. Data are shown for total households in each category and for 52 demographic and attitudinal subgroups of households, according to the key provided in the following explanatory notes.

EXPLANATORY NOTES

1. Each pair of the 54 tables that follow relates to one of the 27 specific cleaning/maintenance tasks about which respondents were queried. Number designation and description of each task is presented in the upper left hand corner of the first table of each pair.

2. The first column of numbers on the far left-hand side of each table defines the group of households for which each line of the table has been computed (See Notes 5 and 6.)

3. The next five columns on the left-hand side of each table, with headings labeled, in order, "TOT.", "1", "2", "3", "4", present the mean annual frequencies of performance of the specified task for, respectively, the weighted total of PENJERDEL households in the defined line group, such households in Zone 1, in Zone 2, in Zone 3, and in Zone 4.

4. Similarly, the initial and succeeding five columns on the right-hand side of each table present the same line-group definitions and the standard errors of the means for the weighted total of relevant PENJERDEL households

and for such households in each of the four Zones, with respect to the specified task.

5. Line-group definitions of households listed on the first page of each pair of tables for a given task are as follows:

Line-Group #	Description of Household Group
1	ALL HOUSEHOLDS
	LENGTH OF RESIDENCE IN HOUSEHOLD
2	2 Years or Less
3	3 to 5 Years
4	6 to 9 Years
5	10 Years or More
	PERCEIVED DIFFICULTY OF KEEPING HOUSEHOLD CLEAN, IN GOOD REPAIR
6	Very Hard Job
7	Fairly Hard Job
8	Fairly Easy Job
9	Very Easy Job
	WHO KEEPS INSIDE CLEAN, REPAIRED
10	Households Using Any Hired Help
11	Use Household Members Only
12	Use Other Help
	WHO KEEPS OUTSIDE CLEAN, REPAIRED
13	Households Using Any Hired Help
14	Use Household Members Only
15	Use Other Help
	PERCEPTION OF NEIGHBORHOOD LIVED IN
16	Extremely or Fairly Dirty
17	About Average
18	Fairly Clean
19	Extremely Clean

	PERCEPTION OF AIR POLLUTION IN NEIGHBORHOOD
20	Serious Problem
21	Minor Annoyance
22	Not A Problem

6. Line-group definitions of households listed on the second page of each pair of tables for a given task are as follows:

Line-Group #	Description of Household Group
1	ALL HOUSEHOLDS (Identical With Line 1 on First Page of Pair)
	FACTOR SEGMENTATION
2	"Do-It-Yourself" Loading ≥ 0.40
3	"Social" Loading ≥ 0.40
4	"Dutiful" Loading ≥ 0.40
5	"Proud" Loading ≥ 0.40
6	"Hit-Or-Miss" Loading ≥ 0.40
7	"Disinterested" Loading ≥ 0.40
8	"Do-It-Yourself" Loading ≥ 0.25
9	"Social" Loading ≥ 0.25
10	"Dutiful" Loading ≥ 0.25
11	"Proud" Loading ≥ 0.25
12	"Hit-Or-Miss" Loading ≥ 0.25
13	"Disinterested" Loading ≥ 0.25
14	Not Segmented
	RACE OF HOUSEHOLD HEAD
15	White
16	Non-White
	EDUCATION OF HOUSEHOLD HEAD
17	Incomplete High School or Less
18	Completed High School
19	Some College or More

	FAMILY INCOME OF HOUSEHOLD
20	Under $6,000 Annually
21	$6,000 to $9,999 Annually
22	$10,000 or More Annually
	NUMBER OF DWELLING UNITS IN STRUCTURE
23	Single-Family Structure
24	Multifamily Structure

Line Group #	Description of Household Group
	TENURE OF HOUSEHOLD
25	Own Home
26	Rent Home
	MARITAL STATUS OF HOUSEHOLD HEAD
27	Married, With Minor Children At Home
28	Married, No Minor Children At Home
29	Not Married
	OCCUPATION OF HEAD OF HOUSEHOLD
30	White Collar
31	Blue Collar
32	Not in Labor Force

MEAN ANNUAL FREQUENCIES

BY ZONE

Inside Task # 1: Painting Walls or Ceilings

	TOT.	1	2	3	4
1	0.36	0.30	0.38	0.54	0.29
2	0.28	0.21	0.41	0.20	0.46
3	0.34	0.33	0.47	0.23	0.24
4	0.48	0.39	0.40	1.00	0.24
5	0.39	0.30	0.32	0.73	0.24
6	0.37	0.32	0.55	0.30	0.34
7	0.30	0.27	0.42	0.28	0.16
8	0.44	0.32	0.34	0.96	0.36
9	0.20	0.21	0.15	0.22	0.24
10	0.37	0.27	0.61	0.24	0.41
11	0.36	0.30	0.32	0.58	0.28
12	0.08	0.00	0.17	0.07	0.00
13	0.31	0.22	0.36	0.50	0.21
14	0.42	0.33	0.43	0.67	0.31
15	0.14	0.08	0.11	0.14	0.32
16	0.26	0.27	0.30	0.22	0.29
17	0.32	0.30	0.36	0.36	0.22
18	0.47	0.28	0.41	1.21	0.44
19	0.32	0.33	0.39	0.13	0.13
20	0.47	0.28	0.47	0.81	0.26
21	0.32	0.30	0.32	0.44	0.19
22	0.33	0.30	0.36	0.31	0.47

(Task # 1 Continued on Following Page)

STANDARD ERROR OF MEANS

BY ZONES

	TOT.	1	2	3	4
1	0.045	0.016	0.046	0.205	0.058
2	0.058	0.034	0.154	0.039	0.216
3	0.040	0.036	0.119	0.047	0.045
4	0.094	0.056	0.055	0.513	0.051
5	0.089	0.020	0.038	0.414	0.030
6	0.047	0.040	0.139	0.056	0.073
7	0.037	0.023	0.115	0.033	0.039
8	0.098	0.025	0.045	0.524	0.122
9	0.025	0.054	0.028	0.075	0.043
10	0.073	0.033	0.200	0.052	0.154
11	0.053	0.018	0.029	0.229	0.064
12	0.051	0.000	0.166	0.066	0.000
13	0.058	0.026	0.096	0.285	0.041
14	0.065	0.020	0.062	0.312	0.083
15	0.036	0.031	0.036	0.041	0.145
16	0.025	0.052	0.053	0.032	0.058
17	0.027	0.030	0.069	0.061	0.034
18	0.125	0.022	0.097	0.748	0.201
19	0.037	0.040	0.099	0.049	0.041
20	0.133	0.033	0.120	0.503	0.045
21	0.036	0.027	0.048	0.160	0.035
22	0.036	0.025	0.070	0.084	0.213

	TOT.		2		
1	0.36	0.30	0.38	0.54	0.29
2	0.36	0.32	0.47	0.47	0.20
3	0.28	0.25	0.24	0.46	0.21
4	0.46	0.48	0.26	0.94	0.18
5	0.41	0.33	0.43	0.26	0.56
6	0.37	0.35	0.52	0.24	0.38
7	0.20	0.31	0.16	0.16	0.13
8	0.40	0.30	0.41	0.73	0.25
9	0.31	0.26	0.31	0.45	0.22
10	0.49	0.34	0.43	0.95	0.26
11	0.29	0.26	0.26	0.32	0.33
12	0.60	0.36	0.36	1.44	0.74
13	0.29	0.29	0.28	0.24	0.37
14	0.25	0.28	0.27	0.14	0.24
15	0.35	0.30	0.34	0.64	0.24
16	0.43	0.31	0.51	0.43	0.44
17	0.43	0.28	0.42	0.77	0.28
18	0.35	0.31	0.40	0.38	0.31
19	0.29	0.30	0.29	0.21	0.43
20	0.42	0.20	0.33	0.86	0.21
21	0.35	0.36	0.35	0.30	0.41
22	0.34	0.32	0.42	0.31	0.33
23	0.46	0.32	0.50	0.94	0.30
24	0.27	0.27	0.29	0.23	0.30
25	0.41	0.33	0.44	0.68	0.21
26	0.24	0.17	0.19	0.26	0.46
27	0.38	0.32	0.47	0.45	0.36
28	0.36	0.24	0.24	0.75	0.17
29	0.19	0.18	0.17	0.23	0.20
30	0.34	0.32	0.35	0.40	0.38
31	0.35	0.32	0.48	0.30	0.35
32	0.42	0.17	0.27	1.00	0.19

		1	-	3	
1	0.045	0.016	0.046	0.205	0.058
2	0.037	0.020	0.097	0.142	0.032
3	0.053	0.033	0.103	0.205	0.056
4	0.119	0.085	0.053	0.605	0.047
5	0.180	0.235	0.137	0.072	0.384
6	0.106	0.073	0.352	0.068	0.125
7	0.063	0.232	0.044	0.060	0.125
8	0.066	0.017	0.069	0.339	0.042
9	0.034	0.022	0.060	0.138	0.033
10	0.121	0.027	0.099	0.532	0.059
11	0.042	0.039	0.038	0.068	0.124
12	0.242	0.039	0.079	1.150	0.435
13	0.033	0.054	0.074	0.057	0.095
14	0.028	0.074	0.048	0.046	0.045
15	0.054	0.017	0.040	0.370	0.033
16	0.077	0.053	0.160	0.119	0.193
17	0.105	0.024	0.105	0.426	0.082
18	0.027	0.025	0.066	0.066	0.048
19	0.025	0.032	0.037	0.040	0.243
20	0.129	0.025	0.060	0.469	0.026
21	0.036	0.039	0.050	0.035	0.161
22	0.038	0.023	0.104	0.045	0.131
23	0.087	0.019	0.090	0.469	0.050
24	0.028	0.031	0.051	0.023	0.120
25	0.060	0.017	0.061	0.306	0.024
26	0.044	0.040	0.035	0.073	0.167
27	0.031	0.019	0.071	0.093	0.090
28	0.134	0.031	0.042	0.563	0.030
29	0.037	0.077	0.066	0.102	0.068
30	0.030	0.029	0.069	0.106	0.112
31	0.036	0.022	0.096	0.032	0.121
32	0.165	[illegible]	[illegible]	[illegible]	[illegible]

Inside Task # 2: Wall-Papering

	TOT.	1	2	3	4
1	0.09	0.07	0.10	0.12	0.12
2	0.04	0.02	0.04	0.04	0.07
3	0.11	0.06	0.15	0.20	0.08
4	0.08	0.08	0.08	0.08	0.12
5	0.12	0.10	0.12	0.15	0.16
6	0.15	0.10	0.21	0.21	0.12
7	0.09	0.08	0.08	0.11	0.14
8	0.08	0.06	0.08	0.10	0.13
9	0.06	0.06	0.06	0.06	0.07
10	0.11	0.06	0.19	0.12	0.12
11	0.09	0.07	0.08	0.12	0.12
12	0.00	0.00	0.00	0.00	0.00
13	0.09	0.04	0.16	0.12	0.09
14	0.10	0.08	0.08	0.15	0.14
15	0.03	0.01	0.03	0.02	0.07
16	0.08	0.07	0.09	0.05	0.13
17	0.10	0.06	0.13	0.14	0.10
18	0.08	0.06	0.08	0.16	0.11
19	0.09	0.09	0.08	0.09	0.14
20	0.09	0.08	0.08	0.10	0.13
21	0.10	0.08	0.09	0.13	0.14
22	0.09	0.06	0.13	0.13	0.09

(Task # 2 Continued on Following Page)

	TOT.	1	2	3	4
1	0.007	0.007	0.017	0.019	0.010
2	0.006	0.007	0.013	0.015	0.022
3	0.035	0.016	0.098	0.102	0.025
4	0.012	0.021	0.022	0.026	0.031
5	0.006	0.012	0.010	0.017	0.014
6	0.039	0.027	0.108	0.099	0.031
7	0.007	0.010	0.011	0.017	0.026
8	0.006	0.008	0.010	0.020	0.014
9	0.012	0.028	0.019	0.022	0.020
10	0.029	0.010	0.080	0.033	0.032
11	0.006	0.008	0.007	0.021	0.011
12	0.000	0.000	0.000	0.000	0.000
13	0.023	0.009	0.061	0.021	0.018
14	0.007	0.009	0.009	0.029	0.013
15	0.009	0.007	0.013	0.009	0.038
16	0.009	0.015	0.018	0.017	0.016
17	0.019	0.010	0.057	0.037	0.015
18	0.008	0.009	0.011	0.036	0.024
19	0.013	0.021	0.014	0.028	0.047
20	0.009	0.017	0.013	0.026	0.015
21	0.011	0.012	0.010	0.048	0.025
22	0.015	0.009	0.057	0.025	0.017

	TOT		2		
1	0.09	0.07	0.10	0.12	0.12
2	0.11	0.07	0.12	0.18	0.15
3	0.12	0.07	0.19	0.12	0.13
4	0.09	0.07	0.12	0.03	0.12
5	0.08	0.00	0.06	0.11	0.09
6	0.12	0.17	0.00	0.09	0.13
7	0.09	0.09	0.32	0.03	0.10
8	0.10	0.07	0.11	0.16	0.15
9	0.11	0.07	0.12	0.14	0.14
10	0.12	0.09	0.15	0.13	0.14
11	0.08	0.07	0.07	0.09	0.11
12	0.09	0.10	0.06	0.12	0.07
13	0.07	0.08	0.08	0.05	0.09
14	0.07	0.03	0.08	0.09	0.10
15	0.10	0.07	0.11	0.15	0.15
16	0.06	0.03	0.05	0.08	0.05
17	0.09	0.06	0.08	0.14	0.10
18	0.10	0.08	0.12	0.09	0.17
19	0.08	0.07	0.09	0.12	0.12
20	0.07	0.06	0.05	0.09	0.08
21	0.10	0.07	0.08	0.14	0.15
22	0.10	0.09	0.11	0.14	0.17
23	0.11	0.08	0.11	0.15	0.15
24	0.08	0.04	0.10	0.10	0.09
25	0.12	0.09	0.12	0.17	0.16
26	0.02	0.01	0.03	0.03	0.04
27	0.10	0.08	0.11	0.13	0.12
28	0.08	0.05	0.06	0.10	0.12
29	0.04	0.02	0.08	0.03	0.04
30	0.10	0.07	0.16	0.10	0.15
31	0.09	0.07	0.06	0.10	0.15
32	0.08	0.05	0.08	0.11	0.08

		1		3	4
1	0.007	0.007	0.017	0.019	0.010
2	0.014	0.010	0.040	0.047	0.017
3	0.040	0.017	0.106	0.042	0.027
4	0.016	0.019	0.030	0.016	0.045
5	0.020	0.000	0.027	0.050	0.033
6	0.032	0.066	0.000	0.033	0.125
7	0.034	0.064	0.092	0.020	0.100
8	0.010	0.007	0.027	0.031	0.016
9	0.015	0.012	0.039	0.043	0.014
10	0.015	0.015	0.046	0.021	0.019
11	0.008	0.018	0.013	0.017	0.015
12	0.012	0.019	0.012	0.037	0.024
13	0.013	0.021	0.032	0.021	0.039
14	0.009	0.010	0.017	0.026	0.021
15	0.008	0.007	0.022	0.032	0.013
16	0.010	0.021	0.016	0.021	0.012
17	0.009	0.011	0.011	0.036	0.011
18	0.015	0.013	0.042	0.015	0.028
19	0.010	0.010	0.014	0.056	0.044
20	0.007	0.014	0.010	0.019	0.010
21	0.013	0.014	0.015	0.043	0.021
22	0.009	0.011	0.011	0.047	0.027
23	0.009	0.009	0.012	0.040	0.019
24	0.011	0.009	0.033	0.016	0.012
25	0.009	0.008	0.024	0.029	0.013
26	0.005	0.003	0.009	0.012	0.016
27	0.010	0.009	0.027	0.029	0.013
28	0.007	0.008	0.013	0.020	0.021
29	0.010	0.013	0.022	0.019	0.019
30	0.016	0.010	0.051	0.022	0.029
31	0.007	0.013	0.010	0.020	0.018
32	0.008	0.010	[illegible]	[illegible]	[illegible]

Inside Task # 3: Washing Walls

	TOT.	1	2	3	4
1	2.99	3.04	2.68	2.99	3.36
2	3.42	1.75	3.93	5.23	4.86
3	3.84	4.04	3.93	2.53	5.22
4	2.91	2.62	2.13	3.72	4.75
5	2.45	3.50	1.65	1.70	1.57
6	3.63	4.24	3.11	4.11	1.80
7	2.76	3.21	2.26	1.75	4.80
8	2.77	2.65	2.91	2.85	2.94
9	3.49	2.88	2.45	5.06	4.22
10	2.96	3.07	2.78	4.07	1.09
11	2.96	3.04	2.69	2.70	3.63
12	0.73	0.00	0.25	0.00	3.00
13	2.20	2.69	2.34	1.00	1.52
14	3.22	3.15	2.79	3.70	3.41
15	3.10	3.14	3.51	1.33	6.33
16	4.07	2.11	4.61	4.78	4.72
17	2.62	3.23	2.16	2.32	2.34
18	3.20	3.67	2.58	2.81	3.01
19	2.02	2.10	2.02	0.40	2.39
20	4.01	3.80	4.17	4.55	3.39
21	2.47	2.47	2.46	2.25	3.07
22	2.70	3.22	1.50	1.92	3.61

	TOT.	1	2	3	4
1	0.233	0.429	0.401	0.507	0.574
2	0.553	0.540	1.021	1.486	1.573
3	0.601	1.158	1.207	0.741	1.400
4	0.615	0.932	0.611	1.798	2.329
5	0.299	0.743	0.464	0.451	0.376
6	0.630	1.445	1.035	1.457	0.707
7	0.398	0.800	0.642	0.606	1.351
8	0.344	0.588	0.654	0.741	0.833
9	0.808	1.224	1.345	2.229	1.790
10	0.572	0.952	0.791	2.562	0.515
11	0.254	0.482	0.470	0.458	0.642
12	0.742	0.000	0.250	0.000	3.000
13	0.391	0.839	0.697	0.304	0.625
14	0.295	0.516	0.492	0.702	0.716
15	0.835	1.905	1.900	0.634	2.283
16	0.713	1.200	1.606	1.469	1.265
17	0.354	0.856	0.671	0.535	0.742
18	0.398	0.748	0.576	0.937	1.032
19	0.444	0.700	0.666	0.305	1.168
20	0.479	1.150	0.914	1.088	0.763
21	0.357	0.598	0.654	0.685	1.133
22	0.381	0.673	0.460	0.676	1.331

(Task # 3 Continued on Following Page)

	OT.		2		
1	2.99	3.04	2.68	2.99	3.36
2	2.86	2.98	2.39	2.90	3.13
3	2.77	3.78	2.54	1.26	2.14
4	1.85	1.41	0.54	4.89	1.42
5	3.16	0.00	0.89	3.07	5.66
6	7.47	9.92	7.50	0.50	0.00
7	3.18	1.40	0.11	5.78	0.00
8	3.15	3.05	2.48	4.19	3.13
9	2.87	2.93	3.14	2.28	3.10
10	2.67	3.00	1.69	2.83	3.37
11	3.65	4.24	2.90	3.60	3.65
12	3.57	3.85	4.95	1.76	3.09
13	2.37	2.92	1.95	2.31	0.28
14	2.79	3.48	3.39	1.37	1.78
15	2.81	3.09	2.73	2.12	2.58
16	3.67	2.60	2.52	4.08	5.15
17	2.91	3.50	1.90	3.14	2.69
18	3.39	2.66	3.68	3.46	6.09
19	2.70	3.04	2.53	1.63	0.72
20	2.62	1.91	1.45	3.28	4.15
21	2.87	2.29	4.53	2.74	2.46
22	3.67	4.33	2.44	3.15	3.46
23	2.89	2.85	2.74	3.48	2.31
24	3.13	3.48	2.59	2.79	3.99
25	2.76	2.91	2.66	2.62	2.59
26	3.57	3.58	2.71	3.73	4.55
27	3.72	3.74	3.42	3.93	3.85
28	1.57	1.54	1.18	1.57	2.54
29	1.81	1.27	3.22	0.38	2.06
30	2.98	3.35	2.64	2.70	1.33
31	3.57	3.34	3.83	3.67	3.65
32	2.27	2.01	1.38	2.42	3.70

		1		3	4
1	0.233	0.429	0.401	0.507	0.574
2	0.333	0.536	0.492	0.687	1.343
3	0.590	1.484	0.969	0.448	0.984
4	0.545	0.954	0.303	2.301	0.912
5	1.082	0.000	0.705	2.244	1.956
6	2.396	4.170	4.407	0.327	0.000
7	2.720	0.400	0.111	5.777	0.000
8	0.302	0.487	0.454	0.807	0.866
9	0.360	0.665	0.683	0.685	0.876
10	0.358	0.776	0.444	0.717	1.045
11	0.513	1.292	1.070	1.007	0.823
12	0.611	1.099	1.475	0.464	1.173
13	0.751	1.313	1.190	1.991	0.170
14	0.580	1.512	1.186	0.497	0.699
15	0.253	0.447	0.444	0.525	0.602
16	0.560	1.649	0.924	0.929	1.281
17	0.360	0.897	0.552	0.784	0.636
18	0.428	0.646	0.762	0.886	1.551
19	0.456	0.702	0.836	0.767	0.389
20	0.412	0.793	0.518	0.908	0.977
21	0.387	0.557	1.135	0.625	0.683
22	0.473	0.843	0.515	1.256	1.745
23	0.312	0.521	0.530	0.829	0.662
24	0.365	0.793	0.607	0.671	0.923
25	0.251	0.465	0.420	0.521	0.644
26	0.534	1.082	0.989	1.115	1.104
27	0.324	0.583	0.566	0.737	0.766
28	0.301	0.527	0.470	0.614	0.952
29	0.799	0.822	1.978	0.180	1.539
30	0.398	0.683	0.655	0.878	0.690
31	0.402	0.722	0.803	0.850	0.871
32	0.436	0.923	0.575	0.919	[illegible]

Inside Task # 4: Replacing Air Conditioner Filter

	TOT.	1	2	3	4
1	0.45	0.36	0.50	0.30	0.98
2	0.24	0.09	0.33	0.14	0.80
3	0.36	0.38	0.45	0.15	0.49
4	0.60	0.81	0.75	0.00	0.27
5	0.56	0.37	0.54	0.50	1.40
6	0.36	0.44	0.46	0.15	0.29
7	0.60	0.42	0.69	0.20	2.23
8	0.43	0.35	0.42	0.27	0.97
9	0.32	0.13	0.27	0.93	0.12
10	0.49	0.37	0.76	0.24	0.58
11	0.45	0.35	0.43	0.31	1.03
12	0.00	0.00	0.00	0.00	0.00
13	0.51	0.26	0.57	0.20	1.90
14	0.48	0.37	0.55	0.40	0.92
15	0.20	0.52	0.13	0.06	0.00
16	0.58	0.35	0.48	0.21	1.34
17	0.47	0.44	0.40	0.39	0.90
18	0.39	0.29	0.49	0.28	0.89
19	0.44	0.39	0.74	0.10	0.13
20	0.60	0.13	0.62	0.38	0.47
21	0.49	0.63	0.49	0.21	0.31
22	0.32	0.25	0.41	0.30	0.62

	TOT.	1	2	3	4
1	0.069	0.058	0.078	0.068	0.344
2	0.106	0.025	0.107	0.084	0.528
3	0.076	0.096	0.190	0.069	0.228
4	0.153	0.353	0.258	0.000	0.088
5	0.129	0.066	0.127	0.131	0.659
6	0.080	0.228	0.136	0.066	0.113
7	0.197	0.117	0.201	0.049	1.368
8	0.083	0.077	0.094	0.080	0.402
9	0.104	0.046	0.078	0.488	0.059
10	0.093	0.092	0.214	0.080	0.272
11	0.081	0.069	0.081	0.076	0.386
12	0.000	0.000	0.000	0.000	0.000
13	0.195	0.080	0.158	0.057	1.247
14	0.080	0.068	0.106	0.104	0.377
15	0.084	0.417	0.051	0.036	0.000
16	0.288	0.273	0.283	0.087	0.838
17	0.107	0.154	0.125	0.144	0.505
18	0.069	0.064	0.105	0.066	0.412
19	0.087	0.097	0.226	0.100	0.068
20	0.193	0.043	0.196	0.132	0.638
21	0.065	0.146	0.110	0.051	0.110
22	0.068	0.056	0.093	0.145	0.442

(Task # 4 Continued on Following Page)

	OT.		2		
1	0.45	0.36	0.50	0.30	0.98
2	0.50	0.43	0.52	0.46	1.10
3	0.84	0.67	0.61	0.81	2.21
4	0.50	0.19	0.27	0.16	1.93
5	0.43	2.40	0.72	0.05	0.06
6	0.13	0.21	0.03	0.00	0.50
7	0.15	0.20	0.00	0.11	0.50
8	0.49	0.42	0.43	0.45	1.10
9	0.58	0.43	0.48	0.41	1.63
10	0.52	0.46	0.53	0.48	0.77
11	0.35	0.43	0.30	0.25	0.45
12	0.23	0.18	0.43	0.16	0.25
13	0.30	0.24	0.77	0.15	0.19
14	0.48	0.11	0.61	0.19	1.21
15	0.50	0.38	0.57	0.38	1.10
16	0.28	0.08	0.26	0.20	0.70
17	0.49	0.46	0.30	0.22	1.09
18	0.50	0.34	0.68	0.45	0.94
19	0.33	0.29	0.56	0.24	0.12
20	0.30	0.27	0.09	0.11	0.91
21	0.45	0.33	0.48	0.49	0.69
22	0.53	0.42	0.89	0.45	0.20
23	0.44	0.34	0.60	0.49	0.54
24	0.40	0.34	0.39	0.16	1.06
25	0.55	0.39	0.61	0.42	1.36
26	0.19	0.23	0.19	0.06	0.34
27	0.43	0.33	0.64	0.36	0.59
28	0.51	0.48	0.32	0.22	1.71
29	0.33	0.05	0.15	0.13	1.56
30	0.53	0.44	0.84	0.39	0.57
31	0.44	0.29	0.40	0.44	0.97
32	0.40	0.33	0.26	0.07	1.21

				3	
1	0.069	0.058	0.078	0.068	0.344
2	0.101	0.084	0.101	0.136	0.785
3	0.312	0.233	0.136	0.397	1.846
4	0.410	0.107	0.100	0.094	1.790
5	0.211	2.400	0.665	0.045	0.039
6	0.048	0.096	0.029	0.000	0.500
7	0.085	0.200	0.000	0.111	0.500
8	0.089	0.074	0.069	0.111	0.572
9	0.145	0.105	0.090	0.127	0.755
10	0.120	0.139	0.105	0.137	0.618
11	0.092	0.188	0.141	0.118	0.249
12	0.080	0.043	0.281	0.120	0.086
13	0.122	0.105	0.542	0.072	0.100
14	0.197	0.051	0.229	0.087	0.656
15	0.081	0.062	0.085	0.094	0.449
16	0.129	0.045	0.188	0.098	0.480
17	0.143	0.156	0.115	0.092	0.479
18	0.083	0.084	0.141	0.138	0.473
19	0.055	0.050	0.164	0.079	0.080
20	0.135	0.143	0.023	0.029	0.518
21	0.096	0.134	0.167	0.177	0.328
22	0.074	0.078	0.181	0.136	0.069
23	0.069	0.074	0.163	0.145	0.249
24	0.105	0.098	0.070	0.041	0.534
25	0.091	0.066	0.104	0.100	0.519
26	0.075	0.123	0.059	0.024	0.292
27	0.062	0.068	0.124	0.105	0.235
28	0.176	0.129	0.064	0.063	1.024
29	0.325	0.050	0.069	0.090	1.439
30	0.065	0.074	0.162	0.123	0.186
31	0.117	0.106	0.125	0.139	0.532
32	0.176	0.168	0.119	[illegible]	[illegible]

Inside Task # 5: Replacing Furnace Air Filter

	TOT.	1	2	3	4
1	0.81	0.98	0.84	0.63	0.42
2	0.45	0.58	0.51	0.23	0.21
3	0.91	1.12	1.14	0.30	0.53
4	0.77	1.11	0.44	0.53	0.31
5	0.99	1.12	1.01	0.98	0.54
6	1.03	0.95	1.25	1.04	0.79
7	0.93	1.32	0.77	0.51	0.64
8	0.80	0.91	0.87	0.72	0.29
9	0.30	0.50	0.23	0.07	0.16
10	0.92	1.18	0.80	0.42	0.21
11	0.80	0.93	0.86	0.66	0.45
12	0.11	0.00	0.25	0.00	0.00
13	0.66	0.84	0.66	0.48	0.23
14	0.96	1.08	1.10	0.77	0.56
15	0.21	0.34	0.00	0.34	0.03
16	0.55	0.52	0.57	0.54	0.56
17	0.65	0.75	0.59	0.64	0.40
18	0.88	0.98	0.98	0.75	0.26
19	1.27	1.42	1.24	0.18	0.45
20	0.70	0.89	0.77	0.59	0.48
21	1.10	1.37	1.01	0.82	0.54
22	0.65	0.74	0.71	0.53	0.19

	TOT.	1	2	3	4
1	0.053	0.106	0.102	0.105	0.092
2	0.071	0.150	0.155	0.095	0.097
3	0.152	0.259	0.336	0.160	0.366
4	0.144	0.297	0.153	0.413	0.173
5	0.087	0.180	0.155	0.185	0.146
6	0.166	0.263	0.353	0.358	0.354
7	0.118	0.291	0.173	0.114	0.290
8	0.071	0.122	0.143	0.196	0.064
9	0.055	0.145	0.068	0.041	0.102
10	0.148	0.326	0.158	0.144	0.120
11	0.057	0.104	0.124	0.118	0.103
12	0.111	0.000	0.250	0.000	0.000
13	0.079	0.183	0.127	0.118	0.083
14	0.074	0.134	0.159	0.146	0.134
15	0.094	0.217	0.000	0.263	0.034
16	0.091	0.166	0.152	0.202	0.180
17	0.077	0.158	0.115	0.157	0.201
18	0.102	0.179	0.204	0.222	0.089
19	0.174	0.261	0.306	0.116	0.276
20	0.092	0.213	0.187	0.195	0.145
21	0.116	0.241	0.190	0.195	0.215
22	0.068	0.110	0.144	0.156	0.074

(Task # 5 Continued on Following Page)

	TOT		2		
1	0.81	0.98	0.84	0.63	0.42
2	1.13	1.18	1.13	1.18	0.53
3	0.77	0.77	0.76	1.11	0.29
4	0.91	1.24	0.81	1.09	0.19
5	0.38	0.33	0.08	0.65	0.32
6	1.58	2.34	0.35	1.00	1.50
7	0.77	0.60	0.50	0.11	6.50
8	0.92	1.01	0.99	0.83	0.45
9	0.73	0.89	0.63	0.67	0.50
10	0.93	1.15	0.84	0.93	0.33
11	0.48	0.52	0.34	0.52	0.48
12	0.93	1.30	0.61	0.51	0.25
13	0.80	1.10	0.55	0.17	1.13
14	0.58	0.89	0.60	0.11	0.30
15	0.94	1.04	1.04	0.76	0.47
16	0.33	0.26	0.18	0.45	0.30
17	0.59	0.63	0.70	0.63	0.37
18	0.81	0.90	0.78	0.76	0.56
19	1.19	1.40	1.09	0.36	0.33
20	0.42	0.53	0.36	0.44	0.26
21	0.63	0.68	0.68	0.49	0.72
22	1.36	1.42	1.43	1.37	0.29
23	0.99	1.14	1.10	0.61	0.62
24	0.60	0.68	0.59	0.67	0.30
25	1.00	1.14	1.05	0.84	0.55
26	0.31	0.43	0.29	0.20	0.20
27	0.93	1.04	1.05	0.73	0.57
28	0.66	0.96	0.56	0.50	0.20
29	0.26	0.24	0.32	0.40	0.03
30	1.11	1.22	1.29	0.58	0.56
31	0.77	0.84	0.77	0.74	0.62
32	0.46	0.68	0.45	0.41	0.16

		1	2	3	4
1	0.053	0.106	0.102	0.105	0.092
2	0.102	0.171	0.175	0.246	0.218
3	0.125	0.249	0.173	0.446	0.109
4	0.184	0.464	0.303	0.539	0.093
5	0.116	0.210	0.060	0.311	0.172
6	0.562	1.222	0.209	0.755	1.500
7	0.675	0.244	0.288	0.111	6.500
8	0.072	0.126	0.141	0.152	0.126
9	0.079	0.191	0.105	0.170	0.149
10	0.099	0.236	0.159	0.204	0.102
11	0.065	0.098	0.084	0.143	0.155
12	0.150	0.333	0.150	0.156	0.121
13	0.192	0.335	0.175	0.077	0.831
14	0.112	0.294	0.225	0.059	0.103
15	0.067	0.114	0.130	0.161	0.122
16	0.055	0.084	0.052	0.120	0.111
17	0.067	0.119	0.154	0.159	0.100
18	0.083	0.125	0.154	0.192	0.252
19	0.160	0.259	0.249	0.126	0.270
20	0.050	0.078	0.069	0.144	0.077
21	0.080	0.145	0.160	0.106	0.242
22	0.144	0.222	0.248	0.432	0.191
23	0.090	0.146	0.202	0.169	0.195
24	0.060	0.150	0.091	0.142	0.072
25	0.069	0.126	0.136	0.141	0.136
26	0.064	0.182	0.083	0.130	0.082
27	0.075	0.132	0.161	0.152	0.140
28	0.074	0.202	0.089	0.144	0.063
29	0.082	0.096	0.180	0.268	0.029
30	0.121	0.200	0.231	0.202	0.156
31	0.083	0.139	0.166	0.182	0.195
32	0.061	0.170	[illegible]	[illegible]	

Inside Task # 6: Cleaning and Oiling Air Conditioner

	TOT.	1	2	3	4
1	0.34	0.25	0.40	0.50	0.32
2	0.10	0.07	0.14	0.08	0.19
3	0.60	0.26	0.27	1.78	0.68
4	0.49	0.55	0.56	0.07	0.73
5	0.35	0.25	0.56	0.40	0.19
6	0.37	0.07	0.55	0.61	0.51
7	0.43	0.39	0.50	0.42	0.43
8	0.32	0.26	0.32	0.60	0.15
9	0.18	0.06	0.18	0.18	0.46
10	0.35	0.19	0.70	0.24	0.23
11	0.35	0.26	0.32	0.53	0.33
12	0.11	0.00	0.25	0.00	0.00
13	0.36	0.10	0.78	0.15	0.48
14	0.33	0.30	0.28	0.45	0.34
15	0.43	0.04	0.10	1.17	0.00
16	0.58	0.01	0.97	0.97	0.34
17	0.22	0.17	0.25	0.23	0.31
18	0.38	0.39	0.27	0.55	0.35
19	0.24	0.15	0.51	0.15	0.21
20	0.45	0.20	0.58	0.52	0.53
21	0.37	0.16	0.44	0.88	0.15
22	0.24	0.32	0.19	0.11	0.06

	TOT.	1	2	3	4
1	0.060	0.084	0.092	0.206	0.098
2	0.038	0.026	0.063	0.035	0.174
3	0.263	0.153	0.092	1.250	0.469
4	0.185	0.426	0.240	0.047	0.462
5	0.073	0.128	0.188	0.129	0.036
6	0.169	0.030	0.374	0.481	0.303
7	0.106	0.229	0.182	0.192	0.229
8	0.096	0.118	0.077	0.460	0.036
9	0.105	0.033	0.060	0.066	0.403
10	0.094	0.042	0.243	0.091	0.100
11	0.070	0.105	0.098	0.232	0.110
12	0.111	0.000	0.250	0.000	0.000
13	0.118	0.034	0.284	0.057	0.265
14	0.060	0.114	0.064	0.167	0.125
15	0.356	0.035	0.046	1.129	0.000
16	0.246	0.011	0.531	0.748	0.201
17	0.058	0.105	0.108	0.108	0.169
18	0.093	0.189	0.051	0.304	0.182
19	0.059	0.037	0.174	0.106	0.103
20	0.115	0.147	0.261	0.260	0.190
21	0.122	0.032	0.118	0.593	0.045
22	0.074	0.168	0.040	0.040	0.028

(Task # 6 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	0.34	0.25	0.40	0.50	0.32	1	0.060	0.084	0.092	0.206	0.098
2	0.35	0.26	0.36	0.60	0.45	2	0.078	0.111	0.086	0.275	0.261
3	0.33	0.36	0.32	0.34	0.19	3	0.076	0.238	0.072	0.116	0.071
4	0.15	0.08	0.25	0.12	0.16	4	0.034	0.051	0.063	0.087	0.066
5	0.02	0.00	0.06	0.00	0.03	5	0.017	0.000	0.055	0.000	0.028
6	0.36	0.14	0.76	0.50	0.00	6	0.254	0.078	0.704	0.267	0.000
7	0.22	0.20	0.00	0.25	0.50	7	0.100	0.200	0.000	0.163	0.500
8	0.27	0.21	0.29	0.39	0.32	8	0.051	0.081	0.058	0.161	0.137
9	0.30	0.18	0.26	0.45	0.48	9	0.067	0.075	0.072	0.223	0.204
10	0.18	0.17	0.24	0.16	0.14	10	0.031	0.084	0.049	0.043	0.037
11	0.28	0.05	0.22	0.41	0.48	11	0.105	0.026	0.136	0.266	0.229
12	0.23	0.07	0.27	0.48	0.57	12	0.090	0.024	0.191	0.266	0.428
13	0.33	0.10	1.45	0.16	0.06	13	0.198	0.045	0.889	0.074	0.062
14	0.83	0.67	0.85	2.04	0.18	14	0.321	0.520	0.430	1.851	0.057
15	0.38	0.26	0.51	0.53	0.45	15	0.062	0.090	0.118	0.192	0.140
16	0.23	0.06	0.05	0.47	0.02	16	0.157	0.043	0.023	0.403	0.015
17	0.34	0.27	0.11	0.70	0.27	17	0.106	0.185	0.025	0.391	0.124
18	0.30	0.11	0.45	0.40	0.57	18	0.075	0.027	0.140	0.239	0.213
19	0.37	0.36	0.57	0.16	0.06	19	0.110	0.178	0.194	0.070	0.058
20	0.20	0.05	0.07	0.56	0.05	20	0.111	0.027	0.020	0.406	0.019
21	0.34	0.11	0.47	0.50	0.53	21	0.095	0.034	0.197	0.276	0.210
22	0.51	0.47	0.64	0.30	0.81	22	0.126	0.203	0.215	0.087	0.538
23	0.34	0.32	0.45	0.29	0.31	23	0.077	0.134	0.189	0.106	0.116
24	0.37	0.14	0.34	0.71	0.37	24	0.104	0.033	0.090	0.386	0.179
25	0.38	0.29	0.48	0.45	0.41	25	0.064	0.107	0.121	0.159	0.135
26	0.26	0.08	0.21	0.60	0.17	26	0.139	0.031	0.099	0.541	0.135
27	0.39	0.30	0.40	0.57	0.43	27	0.085	0.119	0.103	0.326	0.151
28	0.30	0.15	0.47	0.43	0.13	28	0.079	0.038	0.206	0.178	0.039
29	0.05	0.00	0.08	0.07	0.11	29	0.027	0.000	0.053	0.066	0.076
30	0.40	0.33	0.60	0.39	0.33	30	0.088	0.142	0.166	0.202	0.084
31	0.41	0.24	0.23	0.81	0.54	31	0.122	0.153	0.082	0.445	0.219
32	0.13	0.07	[illegible]	0.17	[illegible]	32	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Task # 7: Cleaning Furnace or Heating System

	TOT.	1	2	3	4
1	0.64	0.74	0.77	0.38	0.46
2	0.35	0.42	0.49	0.19	0.14
3	0.68	0.99	0.63	0.17	0.46
4	0.67	0.80	0.78	0.31	0.40
5	0.77	0.80	0.97	0.58	0.66
6	0.76	0.93	0.95	0.40	0.48
7	0.68	0.80	0.85	0.39	0.31
8	0.65	0.72	0.74	0.39	0.54
9	0.35	0.41	0.26	0.27	0.43
10	0.84	0.95	0.85	0.57	0.47
11	0.60	0.68	0.75	0.36	0.47
12	0.16	0.00	0.38	0.00	0.00
13	0.67	0.64	0.86	0.45	0.51
14	0.72	0.82	0.86	0.46	0.48
15	0.10	0.07	0.05	0.06	0.36
16	0.47	0.58	0.66	0.21	0.50
17	0.57	0.58	0.78	0.43	0.46
18	0.77	0.88	0.91	0.42	0.39
19	0.65	0.72	0.48	0.67	0.55
20	0.57	0.67	0.69	0.40	0.50
21	0.71	0.79	0.82	0.46	0.50
22	0.64	0.73	0.79	0.27	0.35

(Task # 7 Continued on Following Page)

	TOT.	1	2	3	4
1	0.039	0.072	0.095	0.031	0.061
2	0.051	0.113	0.117	0.051	0.042
3	0.123	0.330	0.129	0.053	0.112
4	0.086	0.107	0.237	0.084	0.110
5	0.062	0.068	0.186	0.048	0.115
6	0.086	0.208	0.182	0.064	0.094
7	0.083	0.104	0.225	0.059	0.063
8	0.062	0.122	0.133	0.053	0.125
9	0.044	0.106	0.066	0.074	0.086
10	0.130	0.279	0.177	0.119	0.105
11	0.039	0.056	0.113	0.032	0.067
12	0.117	0.000	0.239	0.000	0.000
13	0.082	0.145	0.168	0.083	0.079
14	0.051	0.089	0.138	0.040	0.084
15	0.034	0.047	0.033	0.044	0.133
16	0.072	0.079	0.209	0.048	0.151
17	0.048	0.052	0.147	0.051	0.076
18	0.090	0.162	0.198	0.058	0.059
19	0.051	0.082	0.061	0.205	0.145
20	0.048	0.059	0.149	0.048	0.052
21	0.064	0.095	0.137	0.066	0.214
22	0.083	0.137	0.211	0.048	0.065

	TOT.	1	2	3	4
1	0.64	0.74	0.77	0.38	0.46
2	0.78	0.80	0.97	0.53	0.63
3	0.56	0.71	0.47	0.55	0.33
4	0.75	0.77	0.79	0.52	0.90
5	0.31	0.33	0.35	0.26	0.31
6	0.71	0.65	1.03	0.44	0.25
7	0.52	0.80	0.67	0.36	0.00
8	0.71	0.78	0.80	0.48	0.54
9	0.61	0.81	0.49	0.39	0.55
10	0.65	0.76	0.61	0.49	0.64
11	0.47	0.82	0.41	0.24	0.39
12	0.65	0.75	0.78	0.36	0.33
13	0.70	0.79	1.03	0.40	0.33
14	0.62	0.54	1.00	0.26	0.44
15	0.71	0.77	0.88	0.40	0.44
16	0.38	0.35	0.36	0.35	0.51
17	0.63	0.77	0.82	0.37	0.51
18	0.68	0.84	0.73	0.40	0.37
19	0.61	0.61	0.75	0.40	0.28
20	0.50	0.80	0.45	0.29	0.42
21	0.56	0.55	0.80	0.41	0.51
22	0.83	0.85	0.98	0.52	0.45
23	0.74	0.83	0.87	0.46	0.52
24	0.54	0.58	0.71	0.31	0.45
25	0.79	0.88	0.93	0.51	0.57
26	0.21	0.21	0.30	0.11	0.27
27	0.70	0.81	0.83	0.41	0.50
28	0.53	0.52	0.72	0.36	0.47
29	0.51	0.98	0.37	0.20	0.08
30	0.79	0.81	1.04	0.41	0.50
31	0.59	0.63	0.71	0.45	0.46
32	0.54	0.79	0.53	0.28	0.46

	TOT.	1	2	3	4
1	0.039	0.072	0.095	0.031	0.061
2	0.070	0.117	0.151	0.060	0.190
3	0.058	0.123	0.102	0.124	0.086
4	0.138	0.129	0.259	0.134	0.409
5	0.066	0.210	0.138	0.112	0.114
6	0.256	0.100	0.699	0.175	0.250
7	0.115	0.200	0.333	0.162	0.000
8	0.049	0.091	0.102	0.044	0.104
9	0.057	0.163	0.057	0.050	0.131
10	0.050	0.098	0.090	0.057	0.158
11	0.052	0.229	0.056	0.045	0.056
12	0.091	0.128	0.274	0.072	0.088
13	0.134	0.136	0.558	0.102	0.159
14	0.144	0.079	0.397	0.079	0.079
15	0.048	0.077	0.121	0.041	0.041
16	0.047	0.090	0.050	0.048	0.181
17	0.062	0.124	0.189	0.042	0.084
18	0.070	0.167	0.116	0.053	0.077
19	0.071	0.051	0.215	0.106	0.111
20	0.043	0.180	0.053	0.040	0.056
21	0.074	0.053	0.252	0.054	0.162
22	0.092	0.146	0.177	0.092	0.087
23	0.066	0.104	0.186	0.045	0.120
24	0.047	0.098	0.111	0.044	0.058
25	0.052	0.090	0.127	0.040	0.090
26	0.025	0.042	0.060	0.036	0.060
27	0.055	0.095	0.140	0.041	0.089
28	0.049	0.052	0.134	0.052	0.070
29	0.160	0.594	0.109	0.095	0.060
30	0.103	0.148	0.245	0.074	0.104
31	0.046	0.053	0.127	0.048	0.122
32	0.044	0.160	0.061	0.048	0.060

Inside Task # 8: Dry-Cleaning Draperies

	TOT.	1	2	3	4
1	0.30	0.28	0.25	0.27	0.51
2	0.32	0.17	0.28	0.19	1.10
3	0.26	0.30	0.27	0.13	0.33
4	0.27	0.28	0.23	0.32	0.19
5	0.31	0.33	0.24	0.34	0.30
6	0.26	0.31	0.21	0.12	0.53
7	0.30	0.31	0.30	0.31	0.25
8	0.32	0.23	0.26	0.32	0.75
9	0.27	0.36	0.20	0.24	0.20
10	0.30	0.31	0.31	0.26	0.19
11	0.30	0.27	0.24	0.27	0.55
12	0.12	0.00	0.33	0.00	0.00
13	0.27	0.23	0.31	0.30	0.22
14	0.32	0.28	0.25	0.32	0.59
15	0.27	0.46	0.18	0.08	0.48
16	0.17	0.16	0.11	0.13	0.28
17	0.40	0.37	0.33	0.27	0.95
18	0.30	0.25	0.27	0.42	0.43
19	0.24	0.27	0.21	0.03	0.23
20	0.34	0.32	0.13	0.18	0.82
21	0.26	0.21	0.34	0.37	0.06
22	0.30	0.31	0.29	0.29	0.29

	TOT.	1	2	3	4
1	0.044	0.046	0.037	0.042	0.224
2	0.151	0.059	0.096	0.095	0.781
3	0.043	0.070	0.084	0.057	0.143
4	0.045	0.082	0.081	0.118	0.078
5	0.041	0.091	0.048	0.065	0.119
6	0.065	0.093	0.060	0.052	0.316
7	0.046	0.109	0.065	0.069	0.128
8	0.092	0.061	0.066	0.084	0.475
9	0.057	0.132	0.100	0.123	0.093
10	0.043	0.074	0.074	0.092	0.078
11	0.053	0.054	0.042	0.047	0.250
12	0.125	0.000	0.333	0.000	0.000
13	0.036	0.057	0.071	0.079	0.061
14	0.064	0.059	0.048	0.063	0.323
15	0.095	0.188	0.110	0.037	0.402
16	0.052	0.072	0.052	0.047	0.147
17	0.127	0.123	0.075	0.072	0.713
18	0.047	0.072	0.068	0.092	0.210
19	0.039	0.059	0.064	0.033	0.120
20	0.123	0.087	0.035	0.048	0.432
21	0.033	0.045	0.072	0.087	0.028
22	0.052	0.086	0.074	0.092	0.203

(Task # 8 Continued on Following Page)

	TOT	1	2	3	4
1	0.30	0.28	0.25	0.27	0.51
2	0.33	0.32	0.36	0.37	0.26
3	0.29	0.16	0.37	0.49	0.17
4	0.31	0.27	0.37	0.37	0.21
5	0.82	0.67	0.18	0.11	1.94
6	0.32	0.45	0.24	0.13	0.00
7	0.24	0.40	0.83	0.00	0.00
8	0.33	0.28	0.32	0.31	0.70
9	0.38	0.35	0.26	0.33	0.82
10	0.32	0.30	0.34	0.32	0.33
11	0.44	0.57	0.19	0.22	0.83
12	0.29	0.25	0.22	0.50	0.14
13	0.28	0.29	0.32	0.13	0.57
14	0.18	0.26	0.10	0.10	0.22
15	0.31	0.27	0.27	0.27	0.68
16	0.26	0.47	0.20	0.26	0.14
17	0.27	0.19	0.16	0.26	0.56
18	0.36	0.42	0.29	0.31	0.44
19	0.26	0.22	0.39	0.19	0.50
20	0.27	0.23	0.12	0.22	0.59
21	0.31	0.31	0.26	0.31	0.43
22	0.30	0.23	0.39	0.30	0.65
23	0.28	0.26	0.23	0.33	0.33
24	0.31	0.23	0.28	0.21	0.76
25	0.30	0.29	0.28	0.35	0.33
26	0.29	0.24	0.19	0.10	0.85
27	0.32	0.26	0.30	0.31	0.64
28	0.28	0.37	0.17	0.20	0.35
29	0.15	0.05	0.29	0.23	0.03
30	0.31	0.22	0.26	0.23	1.75
31	0.33	0.30	0.36	0.33	0.39
32	0.23	0.37	0.14	0.19	0.19

	TOT	1	2	3	4
1	0.044	0.046	0.037	0.042	0.224
2	0.043	0.076	0.077	0.087	0.074
3	0.052	0.059	0.102	0.162	0.086
4	0.069	0.139	0.134	0.178	0.091
5	0.656	0.421	0.085	0.062	1.512
6	0.101	0.205	0.136	0.125	0.000
7	0.144	0.400	0.600	0.000	0.000
8	0.065	0.056	0.055	0.059	0.420
9	0.100	0.087	0.056	0.067	0.527
10	0.045	0.095	0.066	0.074	0.149
11	0.156	0.240	0.057	0.070	0.523
12	0.053	0.062	0.105	0.168	0.099
13	0.077	0.099	0.126	0.065	0.410
14	0.042	0.109	0.053	0.055	0.092
15	0.056	0.047	0.045	0.055	0.321
16	0.038	0.186	0.052	0.067	0.061
17	0.091	0.050	0.038	0.066	0.322
18	0.054	0.120	0.060	0.073	0.217
19	0.045	0.037	0.119	0.072	0.363
20	0.111	0.075	0.036	0.058	0.431
21	0.055	0.108	0.078	0.083	0.176
22	0.046	0.040	0.080	0.084	0.368
23	0.036	0.057	0.058	0.069	0.131
24	0.088	0.041	0.053	0.057	0.453
25	0.030	0.056	0.045	0.061	0.094
26	0.139	0.070	0.062	0.032	0.605
27	0.065	0.049	0.053	0.061	0.340
28	0.048	0.114	0.042	0.060	0.178
29	0.058	0.050	0.156	0.107	0.027
30	0.123	0.038	0.060	0.073	1.370
31	0.048	0.085	0.077	0.077	0.160
32	0.043	0.162	0.045	0.063	0.060

Inside Task # 9: Dry-Cleaning Carpeting

	TOT.	1	2	3	4
1	0.24	0.43	0.11	0.09	0.07
2	0.07	0.07	0.06	0.05	0.13
3	0.70	1.51	0.03	0.08	0.00
4	0.12	0.05	0.30	0.04	0.13
5	0.20	0.34	0.11	0.12	0.03
6	0.70	1.61	0.08	0.16	0.01
7	0.09	0.14	0.05	0.07	0.04
8	0.21	0.31	0.16	0.09	0.11
9	0.08	0.13	0.11	0.00	0.02
10	0.42	0.68	0.12	0.14	0.29
11	0.20	0.37	0.10	0.08	0.04
12	0.01	0.00	0.03	0.00	0.00
13	0.32	0.67	0.07	0.08	0.05
14	0.23	0.39	0.12	0.10	0.04
15	0.15	0.19	0.17	0.06	0.23
16	0.05	0.02	0.09	0.02	0.08
17	0.10	0.05	0.20	0.10	0.04
18	0.34	0.60	0.05	0.14	0.06
19	0.47	0.69	0.04	0.00	0.10
20	0.07	0.03	0.06	0.10	0.11
21	0.11	0.17	0.08	0.07	0.01
22	0.49	0.79	0.17	0.09	0.04

(Task # 9 Continued on Following Page)

	TOT.	1	2	3	4
1	0.065	0.196	0.032	0.019	0.027
2	0.023	0.038	0.034	0.025	0.090
3	0.317	0.929	0.016	0.048	0.000
4	0.072	0.030	0.227	0.033	0.085
5	0.082	0.256	0.024	0.034	0.012
6	0.326	1.105	0.037	0.063	0.012
7	0.024	0.073	0.017	0.028	0.026
8	0.087	0.233	0.074	0.034	0.059
9	0.031	0.085	0.078	0.000	0.016
10	0.225	0.558	0.036	0.053	0.230
11	0.064	0.201	0.041	0.021	0.015
12	0.012	0.000	0.027	0.000	0.000
13	0.171	0.565	0.021	0.032	0.026
14	0.080	0.218	0.052	0.028	0.018
15	0.055	0.141	0.089	0.031	0.200
16	0.025	0.010	0.042	0.014	0.069
17	0.030	0.017	0.100	0.035	0.016
18	0.146	0.378	0.014	0.039	0.036
19	0.258	0.488	0.023	0.000	0.085
20	0.018	0.015	0.021	0.037	0.051
21	0.025	0.066	0.022	0.033	0.008
22	0.185	0.418	0.097	0.029	0.033

	|C|	1	2	3	4		|C|	1	2	3	4
1	0.24	0.43	0.11	0.09	0.07	1	0.065	0.196	0.032	0.019	0.027
2	0.09	0.10	0.06	0.12	0.08	2	0.019	0.039	0.016	0.041	0.037
3	0.13	0.11	0.09	0.28	0.02	3	0.029	0.057	0.033	0.116	0.017
4	0.16	0.08	0.36	0.06	0.06	4	0.097	0.043	0.263	0.045	0.030
5	0.07	0.17	0.11	0.05	0.03	5	0.025	0.166	0.076	0.043	0.019
6	1.43	2.60	0.00	0.03	0.00	6	1.082	2.471	0.000	0.025	0.000
7	3.59	10.40	0.08	0.02	0.00	7	2.735	10.400	0.083	0.022	0.000
8	0.18	0.24	0.12	0.13	0.10	8	0.060	0.148	0.049	0.031	0.050
9	0.22	0.40	0.08	0.13	0.08	9	0.093	0.309	0.020	0.036	0.031
10	0.27	0.45	0.17	0.12	0.13	10	0.109	0.357	0.081	0.040	0.075
11	0.28	0.86	0.07	0.05	0.04	11	0.141	0.710	0.027	0.020	0.021
12	0.31	0.56	0.04	0.02	0.00	12	0.216	0.519	0.023	0.008	0.000
13	0.73	1.36	0.10	0.07	0.09	13	0.499	1.266	0.091	0.044	0.067
14	0.04	0.03	0.10	0.00	0.00	14	0.018	0.015	0.056	0.000	0.000
15	0.27	0.46	0.09	0.06	0.08	15	0.084	0.211	0.017	0.016	0.037
16	0.12	0.12	0.17	0.12	0.03	16	0.041	0.063	0.133	0.039	0.027
17	0.30	0.77	0.05	0.09	0.03	17	0.122	0.512	0.019	0.031	0.014
18	0.25	0.46	0.10	0.08	0.07	18	0.110	0.332	0.023	0.028	0.039
19	0.12	0.09	0.19	0.08	0.38	19	0.048	0.031	0.137	0.055	0.352
20	0.21	0.59	0.05	0.06	0.04	20	0.109	0.547	0.021	0.022	0.019
21	0.41	0.86	0.17	0.07	0.05	21	0.178	0.581	0.116	0.025	0.029
22	0.14	0.16	0.07	0.23	0.21	22	0.032	0.057	0.019	0.082	0.187
23	0.19	0.26	0.12	0.08	0.12	23	0.078	0.183	0.073	0.026	0.063
24	0.33	0.81	0.10	0.10	0.03	24	0.118	0.484	0.025	0.030	0.012
25	0.30	0.53	0.11	0.11	0.03	25	0.090	0.251	0.042	0.028	0.015
26	0.08	0.09	0.11	0.03	0.12	26	0.023	0.044	0.042	0.016	0.071
27	0.18	0.27	0.12	0.09	0.06	27	0.060	0.164	0.051	0.027	0.039
28	0.41	0.95	0.09	0.08	0.06	28	0.175	0.620	0.028	0.028	0.021
29	0.07	0.00	0.06	0.14	0.14	29	0.033	0.000	0.040	0.097	0.112
30	0.28	0.41	0.10	0.09	0.17	30	0.122	0.264	0.025	0.029	0.154
31	0.21	0.34	0.12	0.13	0.03	31	0.094	0.298	0.080	0.039	0.020
32	0.26	0.73	0.08	0.03	0.07	32	0.143	0.674	0.027	0.016	0.026

Inside Task #10: Shampooing Carpeting

	TOT.	1	2	3	4
1	1.30	1.43	1.26	1.13	1.23
2	1.26	1.29	1.39	1.03	1.31
3	1.11	1.28	0.85	1.15	0.85
4	1.72	1.40	2.44	1.84	1.32
5	1.29	1.58	1.02	1.02	1.29
6	1.21	1.24	1.53	0.42	1.96
7	1.20	1.31	1.20	0.96	1.32
8	1.21	1.33	1.00	1.41	0.78
9	2.06	2.42	2.07	1.68	1.67
10	1.24	1.24	1.03	1.25	2.19
11	1.33	1.48	1.34	1.13	1.13
12	0.00	0.00	0.00	0.00	0.00
13	1.06	1.08	0.89	0.79	1.90
14	1.47	1.51	1.63	1.35	1.25
15	0.84	1.66	0.36	0.74	0.24
16	1.52	1.40	1.73	1.12	1.97
17	1.17	1.23	1.73	0.91	0.56
18	1.31	1.45	0.89	1.59	1.22
19	1.30	1.63	0.73	0.33	0.71
20	1.84	2.55	1.90	1.25	1.62
21	0.97	0.95	0.96	0.99	1.00
22	1.21	1.37	0.98	1.16	0.69

(Task #10 Continued on Following Page)

	TOT.	1	2	3	4
1	0.107	0.191	0.214	0.187	0.273
2	0.210	0.319	0.329	0.295	0.777
3	0.150	0.258	0.215	0.482	0.270
4	0.416	0.452	1.096	0.980	0.583
5	0.163	0.354	0.306	0.248	0.322
6	0.298	0.428	0.774	0.139	0.714
7	0.146	0.282	0.223	0.271	0.513
8	0.136	0.291	0.190	0.339	0.158
9	0.532	0.795	1.354	0.815	1.246
10	0.239	0.418	0.263	0.710	1.079
11	0.120	0.215	0.268	0.196	0.281
12	0.000	0.000	0.000	0.000	0.000
13	0.192	0.335	0.242	0.373	0.812
14	0.146	0.240	0.341	0.259	0.334
15	0.171	0.539	0.137	0.366	0.201
16	0.333	0.406	0.858	0.436	0.695
17	0.173	0.290	0.498	0.211	0.126
18	0.147	0.271	0.129	0.439	0.447
19	0.308	0.559	0.217	0.210	0.378
20	0.275	0.786	0.607	0.329	0.475
21	0.111	0.154	0.176	0.277	0.443
22	0.144	0.247	0.216	0.374	0.284

	1.1.	1	2	3	4
1	1.30	1.43	1.26	1.13	1.23
2	1.57	1.55	1.64	1.72	1.16
3	0.78	0.88	0.61	0.91	0.67
4	1.59	3.36	0.64	1.02	0.99
5	1.15	0.17	0.88	2.07	0.79
6	1.02	1.20	1.14	0.29	0.50
7	0.49	0.80	0.33	0.08	2.00
8	1.47	1.54	1.35	1.59	1.12
9	1.29	1.42	1.13	1.31	1.15
10	1.48	1.91	0.88	1.49	1.29
11	0.98	0.89	1.41	0.91	0.79
12	1.09	1.02	1.07	1.47	0.67
13	0.74	0.85	1.34	0.31	0.35
14	1.38	1.52	1.08	0.62	2.13
15	1.27	1.28	1.18	1.49	1.08
16	1.45	3.46	1.54	0.66	1.57
17	1.29	2.10	1.16	0.66	0.83
18	1.32	1.13	1.35	1.55	1.68
19	1.22	1.14	0.68	1.80	3.98
20	1.08	1.35	1.26	0.49	1.37
21	1.57	1.54	1.74	1.70	1.16
22	1.24	1.33	0.94	1.49	1.26
23	1.59	1.68	1.48	1.49	1.52
24	0.98	1.07	1.01	0.82	1.04
25	1.34	1.41	0.96	1.41	1.72
26	1.23	1.54	2.13	0.54	0.39
27	1.50	1.55	1.36	1.41	1.66
28	0.99	1.18	1.17	0.72	0.54
29	0.66	1.00	0.71	0.39	0.14
30	1.41	1.54	0.96	1.15	2.54
31	1.49	1.50	1.58	1.56	1.20
32	0.84	0.80	1.22	0.55	0.79

	1C1.	1	2	3	4
1	0.107	0.191	0.214	0.187	0.273
2	0.196	0.290	0.470	0.392	0.258
3	0.102	0.238	0.119	0.311	0.172
4	0.352	1.462	0.288	0.429	0.451
5	0.367	0.166	0.339	1.167	0.366
6	0.325	0.399	0.725	0.285	0.500
7	0.243	0.489	0.333	0.057	2.000
8	0.141	0.229	0.313	0.296	0.249
9	0.170	0.367	0.319	0.319	0.291
10	0.184	0.507	0.172	0.313	0.376
11	0.189	0.205	0.625	0.280	0.284
12	0.170	0.166	0.300	0.622	0.239
13	0.166	0.219	0.661	0.117	0.269
14	0.355	0.623	0.371	0.300	1.029
15	0.101	0.155	0.205	0.307	0.183
16	0.319	1.796	0.642	0.161	0.789
17	0.157	0.547	0.239	0.132	0.196
18	0.170	0.177	0.374	0.393	0.494
19	0.226	0.188	0.137	0.764	3.023
20	0.204	0.414	0.448	0.130	0.532
21	0.208	0.345	0.564	0.431	0.184
22	0.130	0.216	0.162	0.443	0.440
23	0.184	0.291	0.450	0.335	0.378
24	0.122	0.179	0.179	0.203	0.450
25	0.120	0.222	0.124	0.260	0.422
26	0.232	0.376	0.751	0.191	0.126
27	0.143	0.240	0.256	0.280	0.418
28	0.177	0.343	0.446	0.216	0.105
29	0.230	0.624	0.485	0.228	0.112
30	0.213	0.347	0.154	0.416	1.303
31	0.169	0.264	0.416	0.343	0.303
32	0.180	0.235	0.513	0.178	0.296

Inside Task #11: Shampooing Furniture

	TOT.	1	2	3	4
1	0.61	0.62	0.64	0.71	0.30
2	1.04	1.31	0.97	1.02	0.32
3	0.37	0.27	0.82	0.13	0.19
4	0.78	1.48	0.20	0.07	0.12
5	0.40	0.11	0.52	0.87	0.37
6	0.92	0.98	0.89	1.24	0.16
7	0.33	0.14	0.70	0.18	0.55
8	0.39	0.59	0.23	0.16	0.28
9	1.66	1.50	1.71	3.12	0.19
10	0.35	0.37	0.31	0.25	0.56
11	0.67	0.69	0.74	0.78	0.27
12	0.00	0.00	0.00	0.00	0.00
13	0.58	0.74	0.70	0.08	0.35
14	0.68	0.62	0.68	1.06	0.23
15	0.21	0.24	0.17	0.02	0.63
16	0.76	1.53	0.15	0.93	0.29
17	0.68	0.59	0.63	1.03	0.20
18	0.64	0.63	1.03	0.16	0.44
19	0.24	0.29	0.13	0.00	0.27
20	0.91	0.54	1.28	1.26	0.48
21	0.58	0.87	0.58	0.07	0.15
22	0.30	0.47	0.09	0.11	0.07

	TOT.	1	2	3	4
1	0.115	0.208	0.226	0.309	0.091
2	0.293	0.640	0.530	0.682	0.188
3	0.232	0.165	0.721	0.061	0.113
4	0.344	0.946	0.093	0.047	0.063
5	0.144	0.029	0.298	0.523	0.156
6	0.389	0.801	0.723	0.966	0.076
7	0.145	0.044	0.417	0.077	0.326
8	0.123	0.329	0.065	0.049	0.120
9	0.572	0.655	1.293	2.128	0.144
10	0.136	0.278	0.155	0.208	0.479
11	0.136	0.251	0.288	0.348	0.088
12	0.000	0.000	0.000	0.000	0.000
13	0.246	0.560	0.448	0.045	0.262
14	0.153	0.238	0.312	0.482	0.084
15	0.101	0.154	0.117	0.021	0.440
16	0.282	1.206	0.078	0.732	0.147
17	0.239	0.450	0.431	0.588	0.096
18	0.194	0.307	0.468	0.050	0.265
19	0.088	0.158	0.057	0.000	0.183
20	0.249	0.328	0.595	0.661	0.175
21	0.199	0.461	0.354	0.029	0.080
22	0.111	0.253	0.025	0.046	0.039

(Task #11 Continued on Following Page)

	T.I.	1	2	3	4
1	0.61	0.02	0.04	0.71	0.30
2	0.59	0.68	0.42	0.73	0.11
3	0.48	0.05	1.30	0.18	0.10
4	0.69	1.96	0.09	0.24	0.00
5	0.99	0.00	0.38	2.57	0.27
6	1.06	0.09	3.65	0.06	0.00
7	0.25	0.40	0.00	0.02	1.50
8	0.62	0.57	0.76	0.79	0.28
9	0.73	0.54	0.95	1.07	0.31
10	0.62	0.92	0.25	0.60	0.45
11	0.71	0.88	0.32	1.13	0.25
12	0.44	0.31	1.06	0.15	0.46
13	0.32	0.27	0.39	0.09	1.00
14	0.29	0.58	0.05	0.41	0.05
15	0.55	0.55	0.63	0.57	0.40
16	0.82	1.67	0.70	0.91	0.09
17	0.62	0.73	0.49	0.94	0.15
18	0.76	0.87	0.75	0.67	0.40
19	0.41	0.27	0.79	0.11	1.59
20	0.48	0.20	0.55	0.89	0.16
21	1.11	1.53	1.23	0.74	0.36
22	0.37	0.37	0.32	0.30	0.84
23	0.77	0.67	0.94	1.06	0.43
24	0.49	0.62	0.47	0.47	0.24
25	0.50	0.39	0.63	0.75	0.28
26	0.91	1.48	0.69	0.64	0.34
27	0.80	0.84	0.94	0.79	0.38
28	0.28	0.16	0.15	0.69	0.14
29	0.12	0.00	0.30	0.01	0.22
30	0.62	0.28	0.68	1.85	0.71
31	0.69	0.92	0.60	0.62	0.24
32	0.32	0.27	0.69	0.10	0.22

	ICI.	1	2	3	4
1	0.115	0.208	0.226	0.309	0.091
2	0.159	0.292	0.133	0.512	0.047
3	0.314	0.029	0.821	0.084	0.075
4	0.416	1.924	0.063	0.141	0.000
5	0.652	0.000	0.226	2.473	0.138
6	1.107	0.056	3.040	0.062	0.000
7	0.184	0.400	0.000	0.022	1.500
8	0.144	0.215	0.305	0.417	0.112
9	0.213	0.328	0.431	0.636	0.134
10	0.186	0.508	0.087	0.465	0.212
11	0.246	0.715	0.150	0.703	0.085
12	0.231	0.137	0.841	0.070	0.428
13	0.138	0.103	0.272	0.080	0.810
14	0.134	0.531	0.044	0.235	0.028
15	0.116	0.189	0.241	0.326	0.130
16	0.315	1.623	0.567	0.572	0.036
17	0.177	0.408	0.339	0.522	0.050
18	0.223	0.464	0.360	0.491	0.222
19	0.194	0.114	0.602	0.051	0.957
20	0.190	0.129	0.397	0.567	0.060
21	0.309	0.725	0.697	0.494	0.171
22	0.093	0.158	0.111	0.134	0.519
23	0.193	0.279	0.440	0.579	0.169
24	0.147	0.353	0.257	0.341	0.118
25	0.121	0.166	0.254	0.376	0.114
26	0.273	0.755	0.495	0.548	0.160
27	0.168	0.298	0.366	0.415	0.136
28	0.130	0.102	0.092	0.528	0.089
29	0.069	0.000	0.175	0.013	0.152
30	0.217	0.098	0.401	1.121	0.429
31	0.193	0.451	0.350	0.409	0.121
32	0.149	0.154	0.494	0.047	0.085

Inside Task #12: Washing Floor Surfaces

	TOT.	1	2	3	4
1	41.91	40.55	42.06	42.74	45.17
2	41.98	40.02	44.50	43.08	42.10
3	43.32	44.90	39.45	42.30	47.32
4	44.17	42.92	45.05	44.60	47.15
5	40.73	38.39	40.86	42.30	45.90
6	40.95	39.09	38.76	45.33	42.68
7	43.04	41.14	43.13	44.16	48.73
8	41.91	42.04	41.37	39.88	45.46
9	40.58	34.36	47.12	44.16	43.18
10	39.68	38.62	40.96	39.72	42.13
11	42.40	41.06	42.38	43.13	45.58
12	38.55	0.00	42.00	34.67	39.00
13	39.26	35.68	40.82	41.22	46.12
14	43.03	42.14	43.24	43.22	45.88
15	40.51	39.84	39.80	41.15	41.53
16	43.41	38.61	43.97	44.30	46.68
17	43.12	41.24	41.20	46.30	44.64
18	40.61	40.93	41.03	36.83	44.81
19	40.95	39.94	44.25	36.33	42.34
20	43.15	41.34	43.29	43.48	44.89
21	41.11	40.04	39.87	43.32	45.61
22	41.83	40.84	43.76	41.28	45.23

	TOT.	1	2	3	4
1	0.451	0.841	0.843	0.975	0.927
2	0.904	1.778	1.544	1.936	1.987
3	1.019	1.598	2.160	2.293	1.795
4	1.191	2.238	1.992	2.635	2.793
5	0.695	1.311	1.322	1.473	1.331
6	1.175	2.407	2.205	1.901	2.832
7	0.814	1.587	1.488	1.594	1.480
8	0.684	1.146	1.331	1.733	1.354
9	1.344	2.898	1.966	3.029	2.268
10	1.230	2.029	1.932	3.627	3.732
11	0.483	0.918	0.940	1.008	0.944
12	6.904	0.000	10.000	17.333	13.000
13	1.041	2.103	1.621	2.509	1.992
14	0.532	0.927	1.066	1.191	1.082
15	1.447	3.243	2.715	2.685	3.162
16	0.916	2.815	1.923	1.665	1.347
17	0.771	1.681	1.561	1.153	1.784
18	0.812	1.250	1.458	2.286	1.907
19	1.241	1.841	1.849	6.692	3.593
20	0.764	2.024	1.384	1.548	1.338
21	0.812	1.399	1.523	1.716	1.832
22	0.772	1.236	1.420	1.877	1.845

(Task #12 Continued on Following Page)

	101	1	2	3	4
1	41.91	40.55	42.06	42.74	45.17
2	43.01	42.91	41.68	43.69	46.13
3	40.80	39.41	42.17	42.71	38.78
4	41.19	36.23	41.49	43.60	46.74
5	44.70	45.33	38.93	48.45	44.51
6	40.83	39.14	41.49	43.75	52.00
7	40.52	26.40	52.00	46.22	52.00
8	42.59	41.82	42.03	43.28	46.74
9	42.78	41.33	42.66	43.74	46.06
10	42.71	40.92	42.91	43.56	46.70
11	45.28	44.60	43.37	46.62	46.17
12	39.41	37.92	39.80	40.84	45.27
13	39.48	35.74	43.42	44.46	39.75
14	39.28	36.54	41.93	37.34	41.96
15	41.41	40.86	40.83	41.09	45.87
16	44.19	38.88	46.30	44.98	43.57
17	42.81	40.18	43.24	43.57	45.72
18	42.64	43.24	41.07	42.34	45.21
19	39.19	38.68	40.24	40.66	37.61
20	40.21	32.80	41.43	43.05	45.23
21	43.62	44.29	43.53	41.70	45.43
22	41.97	41.61	41.39	45.17	41.92
23	42.03	41.33	42.62	41.94	44.79
24	41.88	40.05	41.50	43.36	44.58
25	41.92	41.36	41.39	41.56	46.35
26	41.82	37.67	43.68	45.18	42.85
27	43.46	42.86	43.03	44.33	45.24
28	39.63	36.33	40.71	40.68	46.05
29	35.53	28.60	39.98	37.07	41.11
30	40.25	39.73	40.27	41.59	42.05
31	44.59	44.13	44.64	44.31	46.41
32	39.83	34.63	40.46	41.80	44.98

	101	1	2	3	4
1	0.451	0.841	0.843	0.975	0.927
2	0.689	1.024	1.399	1.657	1.793
3	1.375	2.766	2.141	3.047	3.626
4	1.525	3.940	2.523	3.206	2.573
5	1.663	6.666	4.145	2.591	2.480
6	2.420	4.221	3.652	5.560	0.000
7	3.880	10.552	0.000	3.821	0.000
8	0.554	0.921	1.087	1.244	1.198
9	0.694	1.358	1.275	1.443	1.425
10	0.737	1.509	1.294	1.541	1.470
11	0.739	1.777	1.729	1.264	1.261
12	1.171	1.959	2.295	2.434	2.577
13	1.698	3.177	3.217	2.535	4.381
14	1.303	2.841	2.178	3.750	2.237
15	0.530	0.858	1.010	1.416	1.091
16	0.822	3.617	1.311	1.276	1.746
17	0.662	1.585	1.286	1.380	1.063
18	0.763	1.301	1.404	1.629	1.962
19	1.070	1.457	2.031	2.921	5.060
20	0.800	2.138	1.478	1.452	1.290
21	0.779	1.363	1.533	1.729	1.616
22	0.859	1.270	1.530	2.059	3.270
23	0.645	1.040	1.286	1.535	1.442
24	0.680	1.502	1.221	1.290	1.413
25	0.539	0.931	1.019	1.252	1.107
26	0.835	1.931	1.491	1.478	1.685
27	0.532	0.937	1.039	1.148	1.165
28	0.875	1.803	1.536	1.798	1.634
29	2.189	4.245	3.732	5.782	3.990
30	0.875	1.329	1.601	1.998	3.062
31	0.624	1.180	1.194	1.362	1.247
32	0.927	2.255	1.708	1.921	1.458

Inside Task #13: Waxing Floor Surfaces

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	14.45	13.76	14.36	16.80	13.01	1	0.520	0.859	0.967	1.242	1.217
2	15.96	14.54	15.40	19.43	15.81	2	1.077	1.775	1.978	2.561	2.581
3	16.37	17.76	15.63	13.20	18.40	3	1.371	2.327	2.436	3.031	3.841
4	17.23	16.17	18.64	21.46	11.49	4	1.568	2.407	3.015	4.251	3.310
5	12.13	11.00	12.03	15.54	10.12	5	0.706	1.170	1.330	1.709	1.531
6	11.95	12.63	9.67	14.99	8.52	6	1.219	2.233	2.101	2.828	2.709
7	14.28	11.28	14.81	20.48	10.87	7	0.981	1.463	1.782	2.401	2.223
8	15.65	16.30	15.56	15.14	13.98	8	0.790	1.329	1.487	1.880	1.838
9	13.67	10.13	15.85	15.36	17.45	9	1.576	2.356	3.279	3.598	3.543
10	12.38	11.61	14.76	12.02	8.24	10	1.209	1.830	2.187	3.113	3.042
11	14.82	14.30	14.06	17.17	13.68	11	0.575	0.970	1.077	1.335	1.318
12	19.22	0.00	29.00	17.33	0.00	12	8.432	0.000	13.503	17.333	0.000
13	12.20	10.97	13.12	15.29	9.24	13	1.031	1.813	1.758	2.689	2.179
14	15.25	14.78	14.69	17.53	14.22	14	0.653	1.032	1.281	1.598	1.529
15	13.73	11.41	14.78	15.66	12.03	15	1.568	2.644	2.852	3.109	3.771
16	15.16	10.26	13.62	17.88	17.83	16	1.262	2.439	2.464	2.563	2.334
17	14.84	13.56	12.92	19.12	11.73	17	0.936	1.743	1.631	1.976	2.054
18	13.78	13.49	16.93	13.38	6.82	18	0.836	1.273	1.624	2.091	1.782
19	14.29	15.84	11.15	5.60	16.30	19	1.397	1.938	2.472	5.170	4.334
20	15.48	13.39	15.86	17.97	14.43	20	0.928	1.960	1.709	2.013	1.746
21	14.36	13.14	14.51	18.61	10.74	21	0.906	1.386	1.629	2.410	2.092
22	13.85	14.48	12.78	13.69	12.43	22	0.881	1.318	1.723	2.072	2.670

(Task #13 Continued on Following Page)

	TOT.	1	2	3	4
1	14.45	13.76	14.36	16.80	13.01
2	15.63	15.58	17.28	13.89	15.10
3	14.84	17.98	15.45	14.69	2.76
4	15.27	14.63	15.53	21.03	8.67
5	17.01	9.58	21.33	19.48	14.29
6	7.82	9.02	5.12	9.50	0.00
7	10.14	1.20	34.67	7.11	31.20
8	15.24	14.97	15.17	17.33	12.51
9	14.34	15.50	13.34	15.54	10.63
10	16.13	14.97	16.00	20.21	12.16
11	14.39	13.99	15.03	16.23	11.41
12	12.59	11.30	12.42	15.65	14.00
13	9.22	9.07	12.82	7.16	9.00
14	11.51	7.94	12.99	13.07	14.63
15	12.78	13.88	13.47	10.36	9.29
16	20.68	13.06	17.48	25.21	21.68
17	12.02	10.55	10.02	15.62	12.19
18	17.25	15.97	17.08	19.66	18.11
19	14.74	14.59	17.24	13.51	6.24
20	11.65	8.66	10.45	14.05	14.03
21	15.64	15.21	15.20	18.12	12.66
22	16.15	15.22	17.02	21.50	10.34
23	14.19	14.44	14.27	15.78	9.70
24	14.74	13.06	14.53	17.00	15.23
25	14.25	13.96	14.93	15.08	12.41
26	15.02	12.68	13.12	20.32	14.27
27	17.14	15.95	17.65	19.94	16.21
28	9.75	9.37	9.66	11.86	6.75
29	7.65	5.10	6.95	12.55	8.44
30	14.85	14.24	16.45	15.53	12.41
31	16.76	16.21	16.06	19.84	14.09
32	10.25	7.33	10.08	13.26	11.16

	TOT.	1	2	3	4
1	0.520	0.859	0.967	1.242	1.217
2	0.817	1.182	1.654	1.952	2.462
3	1.506	3.088	2.488	3.884	1.325
4	1.783	4.071	2.835	4.419	3.297
5	2.569	8.497	5.589	5.095	3.869
6	1.884	3.309	1.769	6.366	0.000
7	4.885	1.200	17.333	5.764	20.800
8	0.656	1.000	1.271	1.602	1.712
9	0.815	1.490	1.446	1.919	1.748
10	0.923	1.570	1.638	2.152	2.160
11	1.046	2.286	2.213	2.048	1.860
12	1.203	1.679	2.283	2.952	4.208
13	1.568	2.193	4.674	2.974	3.373
14	1.269	2.056	2.252	3.759	2.556
15	0.553	0.887	1.080	1.363	1.207
16	1.237	3.581	2.139	2.034	2.671
17	0.764	1.480	1.376	1.791	1.453
18	0.931	1.546	1.642	2.053	2.771
19	1.095	1.419	2.201	3.487	3.125
20	0.861	1.644	1.498	1.785	1.863
21	0.973	1.739	1.971	2.103	1.928
22	0.993	1.366	1.744	3.316	3.363
23	0.729	1.078	1.558	1.837	1.642
24	0.791	1.570	1.320	1.721	1.853
25	0.606	0.973	1.162	1.438	1.462
26	1.027	1.850	1.748	2.349	2.235
27	0.683	1.065	1.322	1.675	1.644
28	0.800	1.494	1.440	1.816	1.591
29	1.721	2.661	2.464	5.539	3.876
30	0.928	1.307	1.785	2.413	3.151
31	0.863	1.532	1.624	1.963	1.832
32	0.923	1.538	1.653	2.173	1.905

Inside Task #14: Washing Windows (Inside Only)

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	12.07	10.06	11.78	12.74	18.95	1	0.391	0.608	0.701	0.815	1.102
2	11.45	9.62	10.51	13.09	16.27	2	0.776	1.187	1.357	1.759	2.117
3	12.40	11.41	12.14	11.79	18.54	3	1.018	1.652	1.989	1.924	2.826
4	12.71	10.84	11.23	16.53	18.69	4	1.046	1.742	1.511	2.775	2.948
5	12.14	9.58	12.48	12.04	20.71	5	0.577	0.872	1.051	1.106	1.643
6	9.84	7.71	9.85	9.24	18.13	6	0.938	1.257	1.752	1.714	2.930
7	12.45	10.93	11.92	12.31	21.55	7	0.732	1.305	1.177	1.338	2.429
8	12.49	10.57	11.45	14.87	18.20	8	0.589	0.896	1.025	1.447	1.568
9	12.64	8.73	16.01	12.10	18.87	9	1.218	1.539	2.942	2.227	2.799
10	11.45	9.66	11.14	12.64	24.07	10	0.926	1.286	1.425	2.668	3.544
11	12.17	10.17	11.82	12.69	18.49	11	0.432	0.690	0.806	0.855	1.161
12	17.61	0.00	23.33	18.00	3.00	12	6.896	0.000	9.637	17.009	3.000
13	10.65	8.17	11.27	8.78	22.16	13	0.765	1.063	1.217	1.172	2.731
14	12.56	10.61	11.77	13.83	19.58	14	0.495	0.756	0.905	1.089	1.336
15	11.95	10.12	14.43	12.33	10.52	15	1.172	2.007	2.774	2.053	2.184
16	14.58	12.04	16.53	12.81	17.72	16	1.028	2.466	2.385	1.711	1.817
17	12.18	9.66	12.87	12.74	17.70	17	0.703	1.138	1.455	1.196	1.999
18	11.13	9.90	9.24	12.64	20.91	18	0.608	0.894	0.825	1.567	2.278
19	11.40	10.00	11.75	13.10	21.65	19	1.003	1.319	1.613	4.904	3.541
20	14.62	10.98	14.12	12.57	22.76	20	0.768	1.531	1.418	1.221	1.633
21	10.89	9.48	11.16	11.17	16.91	21	0.650	1.004	1.181	1.366	2.065
22	11.29	10.25	10.32	14.64	13.46	22	0.615	0.891	1.014	1.707	1.919

(Task #14 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2	3	
1	12.07	10.06	11.78	12.74	18.95	1	0.391	0.608	0.701	0.815	1.102
2	12.01	10.28	11.32	15.15	20.15	2	0.583	0.787	1.078	1.451	2.043
3	12.19	7.06	12.91	14.03	25.41	3	1.182	1.310	1.675	2.960	4.017
4	13.20	10.79	13.87	12.60	17.18	4	1.455	2.629	2.493	2.807	3.632
5	16.38	7.67	6.89	23.58	18.12	5	2.012	2.043	1.488	4.258	3.372
6	8.67	8.69	11.49	4.31	9.00	6	1.880	2.673	4.361	0.749	3.000
7	9.50	12.80	6.67	6.00	21.67	7	2.945	9.805	2.905	2.560	4.333
8	12.31	10.28	11.74	14.80	19.72	8	0.485	0.685	0.863	1.131	1.572
9	12.90	8.94	12.55	14.29	24.09	9	0.648	0.813	1.070	1.389	1.905
10	12.99	10.27	13.28	14.59	18.57	10	0.688	1.068	1.176	1.461	2.051
11	13.90	10.28	13.37	15.29	17.42	11	0.815	1.351	1.701	1.556	1.683
12	9.52	8.64	8.45	9.08	19.74	12	0.840	1.096	1.653	1.545	3.563
13	10.75	10.43	11.76	9.63	13.64	13	1.406	2.409	3.309	2.779	2.695
14	12.15	10.68	11.34	9.48	18.03	14	1.041	2.166	1.694	2.018	2.139
15	11.93	10.01	11.11	13.23	21.32	15	0.447	0.627	0.740	1.175	1.336
16	12.63	11.09	14.13	12.00	13.42	16	0.817	2.608	1.795	1.099	1.800
17	12.99	9.88	13.26	12.96	17.90	17	0.625	1.133	1.222	1.115	1.360
18	12.39	10.40	10.63	14.41	23.61	18	0.673	1.003	1.070	1.509	2.283
19	9.86	9.95	9.89	8.41	12.91	19	0.726	1.051	1.299	1.891	2.605
20	11.63	7.98	12.61	12.43	14.73	20	0.651	1.108	1.320	1.173	1.436
21	14.49	12.51	13.10	14.74	22.22	21	0.794	1.388	1.535	1.471	1.939
22	11.00	10.37	10.43	9.52	24.76	22	0.689	0.940	1.098	1.731	3.401
23	11.71	10.33	10.59	14.59	15.77	23	0.544	0.788	1.008	1.375	1.533
24	12.34	9.61	12.15	11.22	22.22	24	0.592	1.006	0.994	1.005	1.667
25	11.87	9.64	11.27	12.76	21.74	25	0.457	0.664	0.768	0.994	1.420
26	12.80	11.78	13.49	12.70	14.29	26	0.774	1.486	1.612	1.431	1.668
27	12.51	11.13	11.77	12.77	18.97	27	0.498	0.791	0.926	1.035	1.352
28	11.69	8.12	11.92	13.40	19.71	28	0.692	0.929	1.178	1.434	2.148
29	8.83	4.53	11.10	7.96	15.85	29	1.496	0.962	2.588	3.346	4.201
30	11.15	9.66	9.98	13.55	25.09	30	0.662	0.906	0.985	1.781	2.878
31	13.28	12.13	12.11	13.29	18.79	31	0.657	1.140	1.219	1.291	1.658
32	11.51	6.97	13.65	11.09	16.83	32	0.753	0.973	1.558	1.321	1.714

Inside Task #15: Cleaning Venetian Blinds/Shades

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	6.19	4.04	6.17	9.13	9.21	1	0.366	0.529	0.656	0.911	0.986
2	5.19	3.56	4.52	7.96	7.26	2	0.698	1.085	1.096	1.732	1.950
3	4.59	2.48	4.65	8.85	5.89	3	0.768	0.981	1.186	2.445	2.123
4	6.83	3.08	8.81	11.16	12.76	4	1.157	1.210	2.206	3.149	3.790
5	7.19	5.23	6.96	9.43	10.66	5	0.562	0.878	1.076	1.287	1.381
6	5.75	3.86	4.02	10.75	5.91	6	0.840	1.248	1.300	2.263	2.033
7	6.50	3.44	6.25	9.23	14.93	7	0.720	0.926	1.163	1.670	2.596
8	6.33	4.49	7.54	8.01	9.04	8	0.559	0.828	1.138	1.373	1.334
9	5.53	3.80	3.91	10.09	5.86	9	1.033	1.596	1.470	2.820	2.360
10	5.98	4.79	5.93	9.72	8.92	10	0.867	1.312	1.341	2.922	3.000
11	6.23	3.85	6.30	8.98	9.32	11	0.405	0.574	0.760	0.960	1.054
12	8.34	0.00	1.50	19.33	0.00	12	5.677	0.000	1.500	16.424	0.000
13	6.84	4.60	7.63	9.55	9.72	13	0.828	1.255	1.350	2.227	2.538
14	5.96	3.84	5.95	8.69	9.98	14	0.436	0.599	0.824	1.077	1.195
15	6.06	4.67	4.12	8.87	5.30	15	1.167	2.475	1.856	2.402	2.524
16	7.42	2.19	8.22	9.58	9.38	16	0.950	1.227	2.220	1.931	1.669
17	6.26	3.82	4.94	9.39	8.85	17	0.650	1.008	1.094	1.412	1.745
18	6.27	4.57	6.90	9.05	9.38	18	0.601	0.857	1.015	1.696	1.972
19	4.59	4.07	4.72	4.20	9.17	19	0.870	1.161	1.472	1.443	3.558
20	6.80	2.04	6.95	8.92	10.09	20	0.703	0.683	1.262	1.521	1.555
21	5.66	4.54	5.26	7.39	9.17	21	0.587	0.966	0.988	1.313	1.872
22	6.11	4.48	6.61	10.26	7.57	22	0.613	0.830	1.219	1.774	1.543

(Task #15 Continued on Following Page)

	TOT.	1	2	3	4
1	6.19	4.04	6.17	9.13	9.21
2	5.30	3.46	6.34	8.25	9.90
3	7.71	6.29	7.28	11.58	7.88
4	8.65	6.64	8.08	11.45	10.05
5	8.32	2.60	4.74	13.96	6.60
6	2.26	0.38	4.72	4.86	3.00
7	1.70	0.40	0.67	2.89	2.00
8	6.09	4.14	6.74	9.02	9.55
9	6.96	4.70	7.43	8.76	10.42
10	7.58	5.69	8.18	9.74	8.59
11	7.46	4.70	6.81	10.98	6.62
12	3.70	1.85	4.71	7.39	4.52
13	3.87	2.12	5.65	5.56	6.13
14	7.24	5.37	6.54	8.12	11.04
15	5.88	3.75	6.53	9.16	10.51
16	7.38	8.19	4.86	8.96	6.27
17	6.52	4.70	5.80	7.93	8.62
18	6.75	4.45	6.19	10.51	11.18
19	4.36	3.10	5.60	8.46	7.21
20	6.06	3.86	5.16	8.05	7.46
21	7.91	5.69	7.81	10.96	9.24
22	4.05	2.34	5.18	7.99	9.50
23	5.32	3.61	5.22	10.15	5.99
24	7.28	5.30	6.66	8.50	11.45
25	6.46	4.06	6.91	9.51	11.09
26	5.55	4.06	4.12	8.37	6.23
27	5.66	3.58	5.60	8.56	9.46
28	7.59	5.85	6.99	9.69	10.63
29	4.86	0.40	7.50	12.00	1.09
30	5.63	3.63	6.67	9.39	12.88
31	6.77	4.25	5.84	10.33	10.00
32	6.03	5.07	5.21	7.06	7.36

	TOT.	1	2	3	4
1	0.366	0.529	0.656	0.911	0.986
2	0.522	0.648	1.021	1.420	1.898
3	1.176	2.011	1.878	3.488	2.698
4	1.480	3.182	2.257	3.446	3.528
5	1.739	2.600	2.951	4.437	2.171
6	1.185	0.212	3.109	1.944	3.000
7	0.699	0.400	0.666	1.337	2.000
8	0.452	0.618	0.866	1.126	1.391
9	0.616	0.949	1.134	1.416	1.580
10	0.673	1.102	1.215	1.511	1.763
11	0.759	1.299	1.577	1.724	1.234
12	0.702	0.757	1.509	1.990	2.131
13	1.062	1.286	2.605	2.201	3.688
14	1.058	1.955	1.725	2.701	2.284
15	0.414	0.521	0.772	1.256	1.205
16	0.789	3.109	1.164	1.324	1.675
17	0.555	1.016	1.039	1.169	1.167
18	0.667	0.956	1.109	1.653	2.188
19	0.670	0.795	1.271	2.450	3.499
20	0.614	1.024	1.040	1.328	1.360
21	0.745	1.256	1.482	1.615	1.641
22	0.545	0.586	1.001	2.077	2.473
23	0.467	0.611	0.897	1.422	1.111
24	0.603	1.114	0.977	1.252	1.616
25	0.437	0.596	0.806	1.099	1.280
26	0.682	1.191	1.063	1.630	1.535
27	0.439	0.620	0.792	1.079	1.243
28	0.717	1.155	1.207	1.677	1.956
29	1.572	0.275	3.276	5.405	0.702
30	0.648	0.792	1.140	2.013	2.912
31	0.595	0.888	1.058	1.384	1.523
32	0.700	1.350	1.241	1.571	1.451

Outside Task #16: Painting Outside Walls

	TOT.	1	2	3	4
1	0.08	0.11	0.10	0.04	0.03
2	0.06	0.06	0.10	0.02	0.03
3	0.08	0.11	0.08	0.06	0.01
4	0.09	0.10	0.13	0.06	0.06
5	0.10	0.15	0.10	0.04	0.03
6	0.08	0.11	0.10	0.05	0.02
7	0.09	0.13	0.09	0.04	0.04
8	0.09	0.11	0.13	0.05	0.02
9	0.05	0.07	0.03	0.02	0.04
10	0.11	0.12	0.13	0.03	0.05
11	0.08	0.11	0.09	0.04	0.03
12	0.00	0.00	0.00	0.00	0.00
13	0.09	0.08	0.14	0.04	0.04
14	0.09	0.12	0.10	0.05	0.03
15	0.02	0.09	0.00	0.00	0.00
16	0.05	0.07	0.08	0.02	0.04
17	0.07	0.09	0.14	0.03	0.02
18	0.09	0.11	0.08	0.07	0.02
19	0.13	0.16	0.09	0.00	0.05
20	0.07	0.06	0.13	0.06	0.04
21	0.08	0.12	0.09	0.03	0.00
22	0.09	0.13	0.08	0.04	0.03

	TOT.	1	2	3	4
1	0.006	0.009	0.017	0.008	0.008
2	0.018	0.021	0.060	0.015	0.017
3	0.011	0.017	0.023	0.032	0.014
4	0.014	0.018	0.031	0.035	0.040
5	0.007	0.014	0.014	0.010	0.010
6	0.010	0.021	0.017	0.027	0.014
7	0.009	0.019	0.017	0.013	0.020
8	0.012	0.013	0.039	0.015	0.010
9	0.010	0.019	0.013	0.015	0.027
10	0.027	0.019	0.070	0.017	0.040
11	0.005	0.010	0.011	0.009	0.008
12	0.000	0.000	0.000	0.000	0.000
13	0.021	0.016	0.052	0.014	0.024
14	0.006	0.010	0.013	0.013	0.010
15	0.013	0.074	0.000	0.000	0.000
16	0.008	0.026	0.019	0.009	0.015
17	0.015	0.012	0.051	0.012	0.009
18	0.009	0.016	0.015	0.022	0.016
19	0.013	0.019	0.021	0.000	0.042
20	0.015	0.016	0.049	0.017	0.013
21	0.007	0.014	0.015	0.013	0.004
22	0.008	0.015	0.015	0.013	0.018

(Task #16 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2		
1	0.08	0.11	0.10	0.04	0.03	1	0.006	0.009	0.017	0.008	0.008
2	0.11	0.12	0.14	0.05	0.02	2	0.013	0.013	0.039	0.016	0.016
3	0.05	0.06	0.04	0.03	0.05	3	0.009	0.018	0.010	0.018	0.036
4	0.08	0.14	0.06	0.06	0.01	4	0.017	0.055	0.024	0.041	0.006
5	0.02	0.00	0.01	0.04	0.00	5	0.007	0.000	0.013	0.025	0.000
6	0.10	0.10	0.07	0.13	0.00	6	0.032	0.033	0.059	0.125	0.000
7	0.03	0.10	0.00	0.00	0.00	7	0.014	0.041	0.000	0.000	0.000
8	0.10	0.12	0.11	0.06	0.03	8	0.009	0.011	0.026	0.013	0.013
9	0.06	0.10	0.06	0.04	0.02	9	0.006	0.011	0.011	0.012	0.010
10	0.08	0.13	0.07	0.04	0.02	10	0.007	0.018	0.012	0.013	0.012
11	0.05	0.10	0.04	0.03	0.01	11	0.008	0.032	0.009	0.014	0.009
12	0.09	0.12	0.08	0.07	0.00	12	0.012	0.021	0.024	0.030	0.000
13	0.06	0.10	0.05	0.01	0.06	13	0.013	0.020	0.022	0.005	0.062
14	0.07	0.07	0.10	0.02	0.05	14	0.011	0.019	0.027	0.011	0.019
15	0.10	0.12	0.12	0.04	0.03	15	0.008	0.009	0.022	0.013	0.009
16	0.04	0.06	0.03	0.04	0.03	16	0.006	0.020	0.008	0.011	0.016
17	0.06	0.09	0.08	0.03	0.02	17	0.006	0.013	0.015	0.009	0.007
18	0.11	0.14	0.14	0.05	0.03	18	0.015	0.020	0.041	0.017	0.019
19	0.09	0.10	0.07	0.07	0.09	19	0.010	0.012	0.019	0.032	0.067
20	0.05	0.10	0.07	0.02	0.02	20	0.006	0.017	0.014	0.007	0.010
21	0.08	0.10	0.09	0.07	0.04	21	0.009	0.014	0.021	0.020	0.015
22	0.11	0.14	0.10	0.05	0.05	22	0.010	0.017	0.016	0.023	0.033
23	0.10	0.12	0.12	0.06	0.03	23	0.007	0.011	0.017	0.015	0.014
24	0.07	0.09	0.09	0.03	0.04	24	0.011	0.017	0.030	0.010	0.012
25	0.11	0.13	0.13	0.06	0.04	25	0.008	0.010	0.023	0.012	0.011
26	0.02	0.04	0.02	0.01	0.01	26	0.006	0.021	0.008	0.010	0.011
27	0.10	0.12	0.12	0.05	0.04	27	0.009	0.012	0.027	0.013	0.012
28	0.07	0.11	0.08	0.03	0.02	28	0.007	0.014	0.016	0.009	0.009
29	0.02	0.05	0.02	0.00	0.00	29	0.007	0.024	0.012	0.000	0.000
30	0.10	0.11	0.12	0.04	0.06	30	0.016	0.014	0.047	0.018	0.030
31	0.09	0.12	0.09	0.05	0.03	31	0.008	0.015	0.016	0.016	0.012
32	0.06	0.10	0.08	0.02	0.02	32	0.007	0.018	0.018	0.010	0.011

Outside Task #17: Painting Outside Trim

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	0.23	0.22	0.29	0.20	0.20	1	0.012	0.011	0.038	0.015	0.024
2	0.10	0.08	0.17	0.06	0.07	2	0.020	0.019	0.067	0.024	0.025
3	0.20	0.22	0.25	0.14	0.16	3	0.017	0.024	0.038	0.032	0.052
4	0.31	0.23	0.56	0.27	0.19	4	0.073	0.026	0.227	0.062	0.060
5	0.29	0.30	0.28	0.28	0.30	5	0.013	0.018	0.027	0.021	0.042
6	0.25	0.31	0.26	0.17	0.18	6	0.018	0.043	0.029	0.026	0.034
7	0.24	0.25	0.25	0.21	0.21	7	0.012	0.022	0.023	0.026	0.026
8	0.24	0.20	0.36	0.22	0.19	8	0.026	0.014	0.090	0.028	0.031
9	0.16	0.12	0.17	0.15	0.23	9	0.030	0.029	0.043	0.041	0.103
10	0.23	0.21	0.30	0.17	0.20	10	0.029	0.020	0.078	0.030	0.032
11	0.23	0.23	0.29	0.20	0.20	11	0.014	0.013	0.044	0.017	0.027
12	0.03	0.00	0.08	0.00	0.00	12	0.031	0.000	0.083	0.000	0.000
13	0.23	0.16	0.32	0.24	0.20	13	0.026	0.019	0.066	0.028	0.028
14	0.26	0.26	0.32	0.24	0.25	14	0.016	0.014	0.056	0.021	0.034
15	0.03	0.04	0.02	0.03	0.00	15	0.007	0.022	0.014	0.014	0.003
16	0.22	0.19	0.43	0.13	0.20	16	0.050	0.032	0.213	0.027	0.030
17	0.23	0.22	0.29	0.22	0.15	17	0.019	0.020	0.059	0.025	0.027
18	0.23	0.22	0.25	0.23	0.29	18	0.016	0.020	0.031	0.027	0.077
19	0.23	0.25	0.23	0.14	0.14	19	0.016	0.023	0.029	0.062	0.049
20	0.22	0.20	0.28	0.18	0.21	20	0.020	0.021	0.062	0.023	0.024
21	0.25	0.27	0.25	0.25	0.19	21	0.013	0.024	0.019	0.031	0.040
22	0.22	0.19	0.34	0.17	0.21	22	0.028	0.015	0.108	0.026	0.073

(Task #17 Continued on Following Page)

	101.	1	2		
1	0.23	0.22	0.29	0.20	0.20
2	0.28	0.24	0.40	0.27	0.32
3	0.22	0.17	0.20	0.29	0.36
4	0.27	0.28	0.25	0.25	0.30
5	0.14	0.08	0.25	0.17	0.09
6	0.33	0.40	0.19	0.35	0.00
7	0.12	0.18	0.17	0.06	0.17
8	0.26	0.23	0.34	0.23	0.24
9	0.24	0.20	0.28	0.21	0.30
10	0.27	0.28	0.26	0.25	0.29
11	0.18	0.20	0.19	0.16	0.16
12	0.23	0.25	0.21	0.21	0.14
13	0.16	0.19	0.17	0.10	0.12
14	0.19	0.17	0.22	0.18	0.18
15	0.23	0.22	0.27	0.22	0.23
16	0.22	0.23	0.35	0.18	0.13
17	0.22	0.25	0.27	0.17	0.19
18	0.25	0.24	0.27	0.24	0.26
19	0.22	0.18	0.36	0.21	0.20
20	0.16	0.20	0.18	0.14	0.11
21	0.24	0.22	0.28	0.24	0.24
22	0.29	0.25	0.36	0.24	0.44
23	0.26	0.24	0.32	0.26	0.23
24	0.19	0.18	0.26	0.15	0.17
25	0.29	0.26	0.36	0.27	0.31
26	0.06	0.07	0.08	0.06	0.02
27	0.25	0.23	0.32	0.22	0.23
28	0.21	0.21	0.25	0.18	0.17
29	0.12	0.15	0.13	0.04	0.10
30	0.24	0.21	0.31	0.28	0.32
31	0.26	0.26	0.34	0.21	0.22
32	0.17	0.19	0.19	0.13	0.14

	101.	1	2	3	
1	0.012	0.011	0.038	0.015	0.024
2	0.027	0.016	0.090	0.027	0.078
3	0.029	0.033	0.024	0.056	0.154
4	0.040	0.056	0.038	0.049	0.149
5	0.028	0.037	0.098	0.057	0.028
6	0.059	0.096	0.089	0.145	0.000
7	0.024	0.040	0.016	0.025	0.166
8	0.018	0.013	0.060	0.020	0.042
9	0.025	0.018	0.074	0.023	0.051
10	0.014	0.022	0.020	0.024	0.061
11	0.013	0.028	0.031	0.025	0.026
12	0.018	0.029	0.034	0.040	0.039
13	0.017	0.030	0.039	0.025	0.050
14	0.017	0.025	0.034	0.052	0.035
15	0.010	0.012	0.027	0.020	0.022
16	0.042	0.039	0.147	0.024	0.059
17	0.014	0.022	0.035	0.020	0.032
18	0.017	0.023	0.043	0.028	0.039
19	0.043	0.015	0.157	0.042	0.048
20	0.010	0.020	0.022	0.019	0.020
21	0.015	0.026	0.031	0.029	0.035
22	0.034	0.019	0.096	0.040	0.133
23	0.013	0.015	0.031	0.026	0.045
24	0.024	0.020	0.070	0.018	0.027
25	0.016	0.013	0.051	0.019	0.034
26	0.009	0.018	0.022	0.020	0.013
27	0.018	0.015	0.059	0.021	0.035
28	0.014	0.018	0.039	0.021	0.026
29	0.020	0.053	0.030	0.035	0.040
30	0.020	0.015	0.059	0.035	0.068
31	0.026	0.024	0.084	0.025	0.044
32	0.011	0.023	0.024	0.020	0.024

Outside Task #18: Cleaning/Repairing Screens

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	0.91	0.80	0.93	0.79	1.50	1	0.079	0.072	0.157	0.095	0.324
2	0.46	0.44	0.65	0.29	0.50	2	0.077	0.078	0.219	0.077	0.206
3	0.78	0.95	0.75	0.46	0.73	3	0.068	0.118	0.118	0.102	0.230
4	0.97	0.71	0.93	0.82	2.58	4	0.309	0.095	0.133	0.230	1.984
5	1.19	0.97	1.15	1.17	2.08	5	0.143	0.147	0.324	0.181	0.504
6	1.42	0.65	1.60	1.05	4.31	6	0.416	0.107	0.778	0.337	1.864
7	0.76	0.69	0.66	0.92	0.96	7	0.053	0.069	0.073	0.159	0.163
8	0.91	0.97	0.89	0.70	1.01	8	0.081	0.139	0.191	0.133	0.163
9	0.59	0.49	0.80	0.34	0.85	9	0.138	0.129	0.331	0.112	0.404
10	0.95	0.73	0.64	0.91	3.97	10	0.239	0.102	0.113	0.179	2.077
11	0.90	0.81	1.02	0.77	1.22	11	0.082	0.088	0.202	0.104	0.268
12	0.11	0.00	0.25	0.00	0.00	12	0.111	0.000	0.250	0.000	0.000
13	1.15	0.60	1.19	0.89	3.69	13	0.302	0.097	0.446	0.271	1.621
14	0.95	0.91	0.93	0.96	1.17	14	0.062	0.095	0.134	0.126	0.162
15	0.20	0.21	0.26	0.17	0.18	15	0.056	0.103	0.131	0.097	0.108
16	0.95	0.85	1.74	0.65	0.78	16	0.222	0.214	0.914	0.205	0.167
17	0.79	0.58	1.00	0.76	1.13	17	0.094	0.067	0.261	0.123	0.275
18	1.10	0.98	0.73	0.93	3.16	18	0.170	0.157	0.072	0.213	1.128
19	0.67	0.69	0.55	1.10	0.56	19	0.055	0.072	0.095	0.314	0.188
20	1.16	0.78	1.52	0.79	1.69	20	0.193	0.124	0.475	0.140	0.470
21	0.77	0.66	0.70	0.67	1.79	21	0.122	0.060	0.071	0.101	0.870
22	0.85	0.90	0.61	0.93	0.83	22	0.086	0.141	0.117	0.242	0.235

(Task #18 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2	3	
1	0.91	0.80	0.93	0.79	1.50	1	0.079	0.072	0.157	0.095	0.324
2	0.88	0.78	0.76	0.87	2.03	2	0.103	0.067	0.075	0.136	0.821
3	1.05	0.64	0.91	1.02	2.92	3	0.351	0.135	0.411	0.384	1.851
4	0.87	0.69	0.48	0.82	2.00	4	0.184	0.138	0.094	0.261	0.710
5	0.47	0.50	0.23	0.70	0.36	5	0.077	0.341	0.107	0.193	0.090
6	0.74	0.76	0.65	0.88	0.50	6	0.110	0.152	0.190	0.350	0.500
7	0.59	0.70	0.67	0.50	0.50	7	0.170	0.200	0.666	0.285	0.500
8	0.91	0.75	0.87	0.89	1.94	8	0.082	0.052	0.126	0.118	0.471
9	0.98	0.78	0.81	0.77	2.36	9	0.152	0.095	0.174	0.121	0.743
10	0.96	0.71	0.76	1.07	2.05	10	0.130	0.070	0.103	0.201	0.680
11	0.83	0.82	0.50	0.70	1.38	11	0.167	0.189	0.084	0.175	0.538
12	0.91	0.80	1.06	0.82	1.49	12	0.138	0.082	0.425	0.152	0.618
13	0.73	0.67	0.67	0.98	0.56	13	0.141	0.124	0.212	0.499	0.240
14	1.23	1.28	1.63	0.94	0.78	14	0.309	0.546	0.802	0.450	0.202
15	1.03	0.83	0.97	1.08	2.03	15	0.101	0.077	0.194	0.155	0.457
16	0.48	0.41	0.77	0.43	0.26	16	0.070	0.146	0.206	0.081	0.093
17	0.86	0.60	1.02	0.81	1.19	17	0.116	0.068	0.212	0.159	0.341
18	0.95	0.88	0.70	0.84	2.38	18	0.128	0.103	0.104	0.150	0.930
19	0.83	0.89	0.61	0.65	1.54	19	0.112	0.173	0.089	0.125	1.000
20	0.69	0.64	1.00	0.59	0.52	20	0.082	0.095	0.243	0.119	0.120
21	1.02	0.82	0.87	0.68	2.56	21	0.188	0.094	0.143	0.079	0.920
22	0.94	0.85	0.99	1.07	1.61	22	0.158	0.146	0.392	0.268	0.627
23	1.12	0.96	1.31	1.04	1.72	23	0.133	0.110	0.358	0.193	0.533
24	0.68	0.51	0.64	0.59	1.39	24	0.099	0.069	0.102	0.075	0.479
25	1.07	0.87	1.01	1.07	2.12	25	0.106	0.088	0.203	0.134	0.497
26	0.46	0.51	0.70	0.23	0.42	26	0.069	0.109	0.186	0.067	0.159
27	0.89	0.88	0.76	0.76	1.42	27	0.079	0.099	0.075	0.098	0.366
28	0.97	0.64	1.17	0.82	1.97	28	0.190	0.086	0.423	0.180	0.775
29	0.77	0.44	1.28	1.01	0.29	29	0.371	0.149	0.996	0.860	0.113
30	0.86	0.83	0.58	1.01	1.98	30	0.093	0.139	0.074	0.221	0.591
31	1.06	0.81	1.18	0.85	1.99	31	0.153	0.097	0.222	0.149	0.678
32	0.64	0.63	0.58	0.59	0.81	32	0.072	0.088	0.092	0.157	0.209

Outside Task #19: Cleaning/Repairing Awnings

	TOT.	1	2	3	4
1	0.08	0.05	0.05	0.04	0.31
2	0.06	0.12	0.02	0.03	0.00
3	0.03	0.02	0.05	0.00	0.08
4	0.09	0.03	0.08	0.03	0.48
5	0.10	0.03	0.05	0.06	0.53
6	0.03	0.01	0.06	0.06	0.00
7	0.13	0.03	0.05	0.05	1.06
8	0.08	0.08	0.05	0.04	0.18
9	0.02	0.04	0.01	0.00	0.02
10	0.10	0.09	0.01	0.12	0.54
11	0.07	0.04	0.06	0.03	0.28
12	0.00	0.00	0.00	0.00	0.00
13	0.05	0.08	0.04	0.01	0.04
14	0.10	0.05	0.06	0.06	0.44
15	0.01	0.00	0.00	0.02	0.00
16	0.04	0.07	0.02	0.02	0.07
17	0.05	0.04	0.03	0.06	0.07
18	0.12	0.07	0.04	0.04	0.81
19	0.08	0.02	0.13	0.00	0.50
20	0.15	0.07	0.05	0.05	0.55
21	0.05	0.03	0.06	0.05	0.11
22	0.05	0.07	0.03	0.03	0.00

(Task #19 Continued on Following Page)

	TOT.	1	2	3	4
1	0.037	0.016	0.012	0.013	0.213
2	0.020	0.058	0.018	0.025	0.000
3	0.013	0.017	0.033	0.000	0.045
4	0.072	0.022	0.044	0.033	0.480
5	0.080	0.013	0.018	0.022	0.441
6	0.015	0.007	0.036	0.041	0.000
7	0.128	0.013	0.020	0.028	0.981
8	0.023	0.031	0.020	0.016	0.109
9	0.013	0.040	0.006	0.000	0.023
10	0.056	0.063	0.010	0.077	0.464
11	0.044	0.012	0.015	0.012	0.234
12	0.000	0.000	0.000	0.000	0.000
13	0.021	0.062	0.018	0.010	0.043
14	0.056	0.013	0.019	0.019	0.313
15	0.006	0.000	0.000	0.021	0.000
16	0.013	0.050	0.015	0.014	0.027
17	0.012	0.022	0.019	0.023	0.040
18	0.102	0.034	0.017	0.026	0.776
19	0.060	0.012	0.053	0.000	0.500
20	0.118	0.035	0.024	0.022	0.419
21	0.011	0.012	0.022	0.022	0.052
22	0.015	0.030	0.018	0.024	0.000

	TOT.	1	2	3	4
1	0.08	0.05	0.05	0.04	0.31
2	0.07	0.05	0.06	0.09	0.25
3	0.03	0.00	0.05	0.06	0.07
4	0.05	0.07	0.05	0.00	0.07
5	0.00	0.00	0.00	0.01	0.00
6	0.06	0.05	0.06	0.13	0.00
7	0.00	0.00	0.00	0.00	0.00
8	0.06	0.04	0.06	0.06	0.17
9	0.05	0.04	0.05	0.04	0.12
10	0.06	0.06	0.05	0.04	0.08
11	0.05	0.05	0.06	0.04	0.08
12	0.03	0.02	0.06	0.04	0.00
13	0.34	0.00	0.09	0.04	3.25
14	0.07	0.15	0.04	0.02	0.00
15	0.10	0.06	0.05	0.07	0.44
16	0.01	0.00	0.04	0.00	0.01
17	0.05	0.04	0.05	0.05	0.05
18	0.07	0.08	0.03	0.04	0.27
19	0.14	0.03	0.08	0.04	3.06
20	0.03	0.06	0.02	0.02	0.00
21	0.19	0.08	0.12	0.06	0.91
22	0.04	0.05	0.02	0.06	0.09
23	0.12	0.05	0.08	0.06	0.65
24	0.04	0.05	0.02	0.03	0.05
25	0.10	0.05	0.06	0.05	0.48
26	0.03	0.07	0.01	0.02	0.01
27	0.10	0.06	0.05	0.04	0.44
28	0.05	0.04	0.03	0.05	0.08
29	0.02	0.00	0.07	0.00	0.00
30	0.13	0.03	0.03	0.06	1.70
31	0.06	0.07	0.07	0.04	0.05
32	0.04	0.04	0.04	0.03	0.04

	TOT.	1	2	3	4
1	0.037	0.016	0.012	0.013	0.213
2	0.023	0.015	0.021	0.034	0.182
3	0.016	0.000	0.025	0.064	0.049
4	0.020	0.051	0.038	0.000	0.049
5	0.004	0.000	0.000	0.014	0.000
6	0.035	0.047	0.058	0.125	0.000
7	0.000	0.000	0.000	0.000	0.000
8	0.015	0.011	0.017	0.020	0.095
9	0.011	0.019	0.018	0.022	0.040
10	0.012	0.023	0.022	0.022	0.038
11	0.014	0.030	0.031	0.018	0.032
12	0.013	0.014	0.038	0.027	0.000
13	0.486	0.000	0.086	0.038	3.250
14	0.031	0.117	0.032	0.017	0.000
15	0.049	0.017	0.014	0.023	0.306
16	0.008	0.000	0.026	0.003	0.013
17	0.010	0.019	0.020	0.022	0.020
18	0.029	0.041	0.015	0.018	0.206
19	0.169	0.016	0.036	0.029	3.058
20	0.008	0.031	0.016	0.011	0.000
21	0.127	0.049	0.039	0.025	0.656
22	0.011	0.017	0.012	0.045	0.050
23	0.076	0.015	0.025	0.025	0.497
24	0.011	0.039	0.012	0.013	0.026
25	0.052	0.012	0.016	0.018	0.337
26	0.016	0.061	0.009	0.014	0.011
27	0.058	0.022	0.016	0.013	0.331
28	0.012	0.021	0.016	0.029	0.043
29	0.025	0.000	0.074	0.000	0.000
30	0.119	0.012	0.017	0.036	1.324
31	0.014	0.037	0.024	0.020	0.023
32	0.011	0.027	0.024	0.016	0.026

Outside Task #20: Washing Windows (Outside Only)

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	5.41	4.25	4.59	6.17	10.09	1	0.259	0.353	0.376	0.596	0.879
2	5.00	4.62	3.42	6.84	5.94	2	0.453	0.731	0.471	1.388	1.093
3	5.46	5.08	4.56	4.33	11.57	3	0.702	1.050	1.095	0.826	2.980
4	5.87	4.22	5.50	8.06	10.97	4	0.802	1.051	1.097	2.415	2.852
5	5.51	3.75	4.98	6.01	11.81	5	0.384	0.449	0.595	0.797	1.312
6	5.31	3.98	3.62	5.71	12.50	6	0.721	1.174	0.794	1.447	2.539
7	5.26	4.53	4.93	5.46	9.35	7	0.455	0.753	0.686	0.889	1.817
8	5.46	4.14	4.57	6.71	10.57	8	0.383	0.429	0.558	1.005	1.330
9	5.74	4.44	5.27	7.06	7.67	9	0.809	1.124	1.559	2.104	1.812
10	4.26	3.74	3.59	3.60	12.01	10	0.530	0.784	0.670	0.632	2.780
11	5.67	4.39	4.85	6.49	9.94	11	0.294	0.396	0.447	0.665	0.935
12	4.66	0.00	6.50	4.33	1.00	12	1.879	0.000	3.201	3.844	1.000
13	5.25	3.98	4.35	3.94	15.88	13	0.581	0.805	0.676	0.552	2.684
14	5.63	4.30	5.04	7.02	9.72	14	0.316	0.421	0.485	0.784	1.006
15	4.72	4.74	2.98	5.82	4.80	15	0.791	0.953	1.395	1.867	1.414
16	7.07	5.22	6.81	7.10	9.13	16	0.764	1.349	1.563	1.473	1.490
17	5.19	3.66	4.61	6.39	8.20	17	0.411	0.433	0.743	0.889	1.243
18	5.00	4.21	3.55	5.40	13.31	18	0.416	0.558	0.304	0.987	2.101
19	5.07	4.57	5.17	4.10	10.42	19	0.627	0.875	0.983	1.351	2.384
20	7.12	5.30	5.27	7.04	12.05	20	0.562	0.973	0.720	1.091	1.401
21	5.30	4.61	4.28	6.65	9.08	21	0.434	0.603	0.667	1.142	1.595
22	4.25	3.64	4.37	4.71	7.35	22	0.344	0.481	0.552	0.819	1.388

(Task #20 Continued on Following Page)

	|C|	1	2	3	4
1	5.41	4.25	4.59	6.17	10.09
2	5.78	4.82	5.16	6.95	12.36
3	5.39	3.60	3.21	6.34	15.87
4	5.03	5.28	5.24	3.89	5.60
5	7.45	5.33	3.22	12.00	6.19
6	3.84	3.25	5.50	2.38	9.00
7	2.68	3.80	3.00	2.11	0.50
8	5.49	4.42	4.57	6.74	11.19
9	5.81	4.06	4.45	6.33	13.60
10	5.57	4.28	5.34	5.63	10.50
11	7.06	5.86	5.17	8.01	9.17
12	4.03	3.38	3.31	3.24	12.77
13	3.19	3.60	2.65	1.70	5.80
14	4.95	3.37	3.93	5.70	8.71
15	5.39	4.35	4.20	5.76	12.83
16	5.53	3.14	5.96	6.75	3.74
17	5.63	3.51	5.22	6.35	8.71
18	6.11	5.02	4.96	6.95	14.03
19	3.95	4.17	2.60	3.89	7.50
20	4.89	2.83	3.78	6.84	6.47
21	6.45	5.20	5.68	6.44	11.54
22	5.37	4.96	4.47	4.24	17.69
23	5.02	3.88	4.64	6.63	8.91
24	5.76	5.13	4.51	5.55	10.59
25	5.40	3.81	4.80	5.97	13.18
26	5.50	5.93	4.03	6.59	4.75
27	5.87	4.70	4.66	6.99	11.09
28	4.84	3.42	4.43	5.46	9.40
29	3.02	2.08	4.73	1.40	4.19
30	5.01	4.10	3.75	7.31	13.73
31	6.32	4.85	5.66	6.40	12.03
32	4.63	3.14	4.27	5.30	6.79

	|C|	1	2	3	
1	0.259	0.353	0.376	0.596	0.879
2	0.419	0.550	0.628	1.062	1.891
3	0.791	0.700	0.446	1.814	3.550
4	0.721	2.035	1.355	1.001	1.105
5	1.369	2.304	1.373	3.535	1.913
6	1.203	1.182	3.151	0.625	3.000
7	0.642	2.059	1.000	0.538	0.500
8	0.320	0.433	0.434	0.773	1.270
9	0.455	0.611	0.590	0.950	1.579
10	0.440	0.640	0.671	0.809	1.617
11	0.572	0.836	1.030	1.204	1.223
12	0.532	0.471	0.860	0.497	3.358
13	0.474	0.900	0.578	0.251	1.839
14	0.595	0.657	0.679	1.833	1.577
15	0.299	0.376	0.365	0.758	1.173
16	0.518	0.671	1.111	0.962	0.595
17	0.404	0.605	0.672	0.816	0.970
18	0.482	0.617	0.659	1.111	2.251
19	0.412	0.614	0.290	1.460	2.111
20	0.406	0.422	0.542	1.017	0.918
21	0.535	0.760	0.972	1.026	1.593
22	0.474	0.652	0.502	0.618	3.440
23	0.328	0.411	0.483	0.882	1.181
24	0.425	0.737	0.572	0.805	1.421
25	0.308	0.373	0.414	0.655	1.246
26	0.489	0.921	0.862	1.232	0.822
27	0.349	0.463	0.487	0.850	1.197
28	0.413	0.533	0.655	0.858	1.441
29	0.594	0.789	1.396	0.442	1.256
30	0.419	0.504	0.479	1.306	2.414
31	0.469	0.658	0.724	0.916	1.529
32	0.443	0.488	0.772	1.069	1.019

Outside Task #21: Cleaning/Repairing Storm Windows

	TOT.	1	2	3	4
1	2.16	2.07	1.60	2.12	3.69
2	1.26	1.13	1.15	1.29	1.87
3	2.39	2.97	0.90	1.80	4.31
4	2.31	2.19	3.25	0.87	3.21
5	2.54	2.20	1.67	2.96	4.64
6	1.81	0.73	1.69	1.70	5.69
7	2.20	2.78	1.92	1.31	2.60
8	2.27	2.13	1.62	2.25	4.07
9	2.15	1.71	0.41	4.49	2.25
10	2.09	2.18	1.05	2.68	4.73
11	2.19	2.04	1.78	2.09	3.60
12	0.00	0.00	0.00	0.00	0.00
13	1.82	1.23	1.27	1.58	6.44
14	2.49	2.46	2.09	2.27	3.66
15	0.98	0.34	0.08	2.51	0.13
16	2.24	1.48	2.53	1.52	3.66
17	1.77	1.30	1.40	2.41	2.37
18	2.20	1.98	1.60	2.31	4.98
19	2.79	3.30	1.15	1.30	4.15
20	3.03	2.35	2.08	3.28	4.78
21	1.74	1.65	1.39	1.96	2.85
22	1.90	2.29	1.41	0.96	2.37

	TOT.	1	2	3	4
1	0.179	0.282	0.231	0.390	0.631
2	0.234	0.296	0.345	0.695	0.654
3	0.496	0.963	0.217	0.663	2.106
4	0.565	0.891	1.101	0.223	2.071
5	0.287	0.406	0.348	0.682	0.994
6	0.525	0.131	0.762	0.977	2.238
7	0.285	0.735	0.373	0.237	0.766
8	0.260	0.336	0.359	0.580	0.977
9	0.638	1.042	0.127	2.142	1.281
10	0.415	0.780	0.246	0.652	2.207
11	0.200	0.292	0.289	0.434	0.663
12	0.000	0.000	0.000	0.000	0.000
13	0.426	0.562	0.460	0.341	2.252
14	0.217	0.350	0.316	0.463	0.692
15	0.496	0.180	0.053	1.543	0.079
16	0.505	0.695	1.218	0.779	1.033
17	0.272	0.201	0.300	0.724	0.879
18	0.268	0.359	0.257	0.489	1.467
19	0.587	0.958	0.293	0.334	2.381
20	0.439	0.736	0.625	0.884	1.086
21	0.231	0.355	0.211	0.627	1.046
22	0.241	0.464	0.306	0.199	0.725

(Task #21 Continued on Following Page)

	TOT.	1	2	3	4
1	2.16	2.07	1.60	2.12	3.69
2	2.50	2.38	1.97	2.62	4.72
3	1.31	0.84	0.55	1.89	3.97
4	1.95	3.24	1.43	1.42	1.22
5	2.14	0.17	0.89	3.13	2.61
6	2.08	0.83	4.59	1.38	6.00
7	0.60	0.40	1.00	0.67	0.50
8	2.40	2.34	1.66	2.55	4.15
9	2.26	2.06	1.51	2.62	3.84
10	2.32	2.70	1.71	1.96	3.01
11	2.02	1.65	2.02	1.97	2.61
12	1.73	1.60	1.95	1.48	2.74
13	1.21	1.28	1.22	0.91	1.50
14	1.87	1.18	0.96	1.59	4.70
15	2.39	2.15	1.54	2.78	4.85
16	1.32	1.08	1.82	1.27	0.93
17	1.97	2.10	1.77	1.56	2.50
18	2.70	2.10	1.75	3.23	7.62
19	1.77	2.02	1.21	1.15	2.53
20	1.53	1.57	0.69	1.88	1.97
21	2.58	1.94	2.64	2.53	4.60
22	2.39	2.58	1.63	1.84	5.25
23	2.22	2.09	2.15	2.13	3.23
24	1.98	2.15	0.93	2.14	3.41
25	2.48	2.32	1.78	2.35	5.07
26	1.32	1.21	1.12	1.66	1.30
27	2.45	2.26	1.80	2.60	4.15
28	1.77	1.82	1.27	1.51	3.23
29	0.91	0.48	1.46	0.60	1.35
30	2.34	2.38	1.25	2.32	6.29
31	2.56	2.03	2.16	2.71	4.60
32	1.45	1.49	1.31	1.28	1.79

	TOT.	1	2	3	4
1	0.179	0.282	0.231	0.390	0.631
2	0.294	0.390	0.411	0.653	1.546
3	0.433	0.178	0.108	0.563	2.476
4	0.472	1.938	0.471	0.573	0.449
5	0.937	0.166	0.351	2.244	1.630
6	1.135	0.150	3.049	0.497	6.000
7	0.190	0.400	0.577	0.288	0.500
8	0.236	0.354	0.277	0.559	0.961
9	0.299	0.463	0.359	0.675	1.071
10	0.305	0.646	0.297	0.560	1.067
11	0.355	0.353	0.733	0.703	0.817
12	0.343	0.331	0.851	0.309	1.884
13	0.304	0.663	0.536	0.183	0.801
14	0.431	0.548	0.240	0.543	1.379
15	0.217	0.301	0.225	0.599	0.867
16	0.277	0.530	0.677	0.442	0.400
17	0.263	0.640	0.415	0.444	0.568
18	0.363	0.304	0.425	0.881	2.035
19	0.297	0.511	0.235	0.324	1.624
20	0.254	0.573	0.115	0.606	0.595
21	0.401	0.492	0.776	0.749	1.306
22	0.326	0.527	0.241	0.451	2.358
23	0.228	0.278	0.406	0.520	0.900
24	0.284	0.675	0.156	0.609	0.898
25	0.216	0.323	0.244	0.442	0.912
26	0.320	0.587	0.562	0.773	0.640
27	0.248	0.335	0.340	0.618	0.875
28	0.262	0.605	0.237	0.328	0.973
29	0.378	0.168	1.001	0.411	0.727
30	0.315	0.490	0.210	0.606	2.031
31	0.325	0.400	0.441	0.719	1.134
32	0.286	0.654	0.547	0.596	0.513

	Tot.	1	2	3	4
1	2.16	2.07	1.60	2.12	3.69
2	2.50	2.38	1.97	2.62	4.72
3	1.31	0.84	0.55	1.89	3.97
4	1.95	3.24	1.43	1.42	1.22
5	2.14	0.17	0.89	3.13	2.61
6	2.08	0.83	4.59	1.38	6.00
7	0.60	0.40	1.00	0.67	0.50
8	2.40	2.34	1.66	2.55	4.15
9	2.26	2.06	1.51	2.62	3.84
10	2.32	2.70	1.71	1.96	3.01
11	2.02	1.65	2.02	1.97	2.61
12	1.73	1.60	1.95	1.48	2.74
13	1.21	1.28	1.22	0.91	1.50
14	1.87	1.18	0.96	1.59	4.70
15	2.39	2.15	1.54	2.78	4.85
16	1.32	1.08	1.82	1.27	0.93
17	1.97	2.10	1.77	1.56	2.50
18	2.70	2.10	1.75	3.23	7.62
19	1.77	2.02	1.21	1.15	2.53
20	1.53	1.57	0.69	1.88	1.97
21	2.58	1.94	2.64	2.53	4.60
22	2.39	2.58	1.63	1.84	5.25
23	2.22	2.09	2.15	2.13	3.23
24	1.98	2.15	0.93	2.14	3.41
25	2.48	2.32	1.78	2.35	5.07
26	1.32	1.21	1.12	1.66	1.30
27	2.45	2.26	1.80	2.60	4.15
28	1.77	1.82	1.27	1.51	3.23
29	0.91	0.48	1.46	0.60	1.35
30	2.34	2.38	1.25	2.32	6.29
31	2.56	2.03	2.16	2.71	4.60
32	1.45	1.49	1.31	1.28	1.79

	Tot.	1	2	3	4
1	0.179	0.282	0.231	0.390	0.631
2	0.294	0.390	0.411	0.653	1.546
3	0.433	0.178	0.108	0.563	2.476
4	0.472	1.938	0.471	0.573	0.449
5	0.937	0.166	0.351	2.244	1.630
6	1.135	0.150	3.049	0.497	6.000
7	0.190	0.400	0.577	0.288	0.500
8	0.236	0.354	0.277	0.559	0.961
9	0.299	0.463	0.359	0.675	1.071
10	0.305	0.646	0.297	0.560	1.067
11	0.355	0.353	0.733	0.703	0.817
12	0.343	0.331	0.851	0.309	1.884
13	0.304	0.663	0.536	0.183	0.801
14	0.431	0.548	0.240	0.543	1.379
15	0.217	0.301	0.225	0.599	0.867
16	0.277	0.530	0.677	0.442	0.400
17	0.263	0.640	0.415	0.444	0.568
18	0.363	0.304	0.425	0.881	2.035
19	0.297	0.511	0.235	0.324	1.624
20	0.254	0.573	0.115	0.606	0.595
21	0.401	0.492	0.776	0.749	1.306
22	0.326	0.527	0.241	0.451	2.358
23	0.228	0.278	0.406	0.520	0.900
24	0.284	0.675	0.156	0.609	0.898
25	0.216	0.323	0.244	0.442	0.912
26	0.320	0.587	0.562	0.773	0.640
27	0.248	0.335	0.340	0.618	0.875
28	0.262	0.605	0.237	0.328	0.973
29	0.378	0.168	1.001	0.411	0.727
30	0.315	0.490	0.210	0.606	2.031
31	0.325	0.400	0.441	0.719	1.134
32	0.286	0.654	0.547	0.596	0.513

Outside Task #22: Washing Automobiles

	TOT.	1	2	3	4
1	17.28	19.98	16.63	14.94	12.59
2	18.24	21.23	20.96	14.44	9.57
3	18.14	22.30	16.44	12.93	13.56
4	17.67	20.12	16.24	13.51	16.97
5	16.30	18.29	14.41	16.16	13.05
6	11.38	12.58	10.95	9.70	11.78
7	16.96	18.17	16.98	16.14	13.11
8	19.19	21.92	19.11	16.00	13.17
9	18.89	25.52	14.73	16.50	11.49
10	17.97	19.91	18.81	12.40	9.58
11	17.22	20.00	16.00	15.44	13.07
12	6.80	0.00	16.00	0.00	0.00
13	16.13	21.26	14.36	8.92	12.71
14	18.75	19.91	18.79	18.87	13.73
15	10.93	17.38	10.88	6.98	7.87
16	15.85	24.57	12.48	11.76	14.89
17	15.78	19.12	14.95	14.33	10.55
18	19.54	21.33	18.88	18.21	13.21
19	16.57	16.58	18.25	19.40	8.97
20	17.72	24.77	16.35	15.73	12.83
21	18.52	21.06	17.20	16.83	12.79
22	16.10	17.57	16.55	12.61	12.07

	TOT.	1	2	3	4
1	0.521	0.898	0.979	1.164	1.168
2	1.093	1.890	2.195	2.382	2.014
3	1.329	2.289	2.386	2.970	3.144
4	1.488	2.430	2.553	3.474	4.377
5	0.736	1.285	1.357	1.661	1.674
6	1.117	2.034	2.289	2.065	2.584
7	0.958	1.633	1.688	2.077	2.719
8	0.803	1.305	1.540	1.988	1.718
9	1.669	3.112	3.218	3.741	3.030
10	1.287	2.058	2.139	3.580	3.295
11	0.573	0.999	1.105	1.245	1.256
12	5.764	0.000	12.328	0.000	0.000
13	1.091	2.248	1.671	2.028	2.635
14	0.642	0.997	1.311	1.559	1.439
15	1.548	4.122	3.001	2.257	3.328
16	1.253	3.360	2.392	2.275	2.165
17	0.923	1.821	1.780	1.771	1.880
18	0.880	1.378	1.589	2.173	2.398
19	1.289	1.678	2.469	7.578	3.293
20	0.950	2.384	1.742	1.890	1.628
21	0.908	1.455	1.633	2.187	2.342
22	0.869	1.276	1.763	2.045	2.477

(Task #22 Continued on Following Page)

1	17.28	19.98	16.63	14.94	12.59	1	0.521	0.898	0.979	1.164	1.168
2	20.51	20.98	19.72	20.09	20.07	2	0.789	1.143	1.508	2.030	2.510
3	18.18	16.64	19.60	18.51	19.17	3	1.510	2.575	2.661	3.567	3.751
4	14.59	13.32	19.87	9.20	14.11	4	1.749	3.072	3.304	3.134	3.849
5	10.80	18.67	7.11	9.39	11.76	5	2.075	10.566	3.954	3.666	3.301
6	13.62	13.94	12.69	16.25	0.00	6	2.535	3.858	4.374	6.839	0.000
7	4.22	5.60	0.20	4.00	6.00	7	1.283	2.638	0.151	2.000	6.000
8	19.38	20.55	18.43	19.02	15.73	8	0.649	0.992	1.246	1.595	1.705
9	17.55	18.39	17.65	17.91	13.92	9	0.826	1.408	1.512	1.926	1.917
10	17.01	18.37	17.47	16.17	12.84	10	0.882	1.560	1.618	1.937	2.046
11	14.45	18.48	11.08	14.14	12.55	11	1.012	2.416	1.835	1.969	1.895
12	15.20	17.15	15.23	11.48	11.21	12	1.134	1.772	2.330	2.249	3.341
13	14.57	15.98	17.00	12.96	6.80	13	1.869	2.805	5.043	3.733	3.763
14	15.09	20.10	14.16	14.86	7.94	14	1.391	3.163	2.427	3.957	1.925
15	18.13	20.04	17.15	15.81	13.99	15	0.586	0.916	1.095	1.529	1.422
16	14.05	19.98	14.82	13.54	9.48	16	1.123	4.342	2.175	1.784	2.012
17	12.53	15.49	12.11	10.65	10.45	17	0.751	1.643	1.503	1.493	1.373
18	21.00	22.85	19.85	19.33	19.11	18	0.921	1.558	1.598	2.055	2.658
19	20.64	21.26	19.38	21.11	14.71	19	1.087	1.436	2.141	3.437	3.518
20	7.63	11.15	5.66	6.10	7.26	20	0.692	1.782	1.167	1.274	1.397
21	21.32	21.87	21.34	21.59	18.94	21	1.015	1.749	2.083	2.100	2.315
22	23.05	23.72	22.99	22.67	16.22	22	0.936	1.373	1.626	2.771	2.956
23	17.59	19.06	18.02	14.26	14.90	23	0.738	1.104	1.556	1.680	1.934
24	16.54	20.87	15.07	15.52	10.50	24	0.788	1.659	1.340	1.662	1.583
25	18.39	19.89	17.35	17.90	14.66	25	0.607	0.990	1.119	1.458	1.487
26	14.30	20.12	14.94	9.00	9.39	26	1.014	2.139	2.050	1.787	1.893
27	19.80	21.93	20.07	17.19	14.86	27	0.656	1.055	1.258	1.543	1.554
28	12.44	14.91	10.77	11.28	10.21	28	0.876	1.718	1.557	1.803	1.970
29	13.47	19.00	13.44	12.53	2.41	29	2.251	5.167	4.109	5.549	1.688
30	20.16	20.16	20.75	20.96	15.62	30	0.906	1.286	1.703	2.513	2.893
31	21.32	23.27	19.91	20.83	18.35	31	0.876	1.579	1.649	1.882	1.978
32	7.53	12.84	7.60	2.70	5.36	32	0.783	2.009	1.579	1.058	1.980

Outside Task #23: Waxing Automobiles

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	3.11	3.47	3.49	2.70	1.75	1	0.245	0.472	0.481	0.517	0.413
2	3.71	4.48	4.33	2.62	1.89	2	0.542	1.088	1.139	1.023	0.818
3	3.26	4.25	4.93	0.42	0.55	3	0.637	1.358	1.401	0.150	0.219
4	2.35	2.72	3.14	1.09	0.55	4	0.469	0.754	1.158	0.351	0.357
5	2.88	2.72	2.58	3.80	2.31	5	0.354	0.651	0.589	0.894	0.723
6	2.63	4.17	2.23	1.34	1.04	6	0.529	1.322	1.062	0.583	0.634
7	2.72	2.91	2.96	2.72	1.10	7	0.377	0.733	0.700	0.789	0.449
8	3.38	3.41	3.58	3.82	2.17	8	0.409	0.735	0.711	1.116	0.718
9	3.73	4.21	7.04	1.10	2.15	9	0.828	1.479	2.527	0.508	1.254
10	3.69	4.18	4.27	2.05	0.50	10	0.671	1.264	1.123	1.154	0.194
11	3.01	3.29	3.30	2.82	1.91	11	0.264	0.498	0.536	0.568	0.464
12	0.42	0.00	1.00	0.00	0.00	12	0.293	0.000	0.577	0.000	0.000
13	3.24	4.30	3.11	1.97	1.33	13	0.523	1.247	0.825	0.786	0.672
14	3.13	3.09	3.67	3.29	2.11	14	0.304	0.501	0.631	0.753	0.576
15	2.51	5.46	2.55	0.94	0.60	15	0.672	2.555	1.425	0.570	0.411
16	3.31	5.73	2.09	2.53	2.88	16	0.554	1.827	0.686	0.916	1.087
17	3.44	3.73	4.97	2.91	0.76	17	0.485	1.008	1.102	0.872	0.259
18	3.14	3.46	3.20	2.87	1.63	18	0.404	0.746	0.709	0.974	0.537
19	2.23	2.28	2.83	0.40	1.06	19	0.541	0.738	1.200	0.266	0.564
20	2.90	4.90	2.54	2.17	1.77	20	0.351	1.214	0.595	0.625	0.505
21	3.76	3.95	3.41	4.22	2.75	21	0.492	0.880	0.786	1.238	1.224
22	2.76	2.63	4.61	1.94	0.68	22	0.424	0.614	1.070	0.848	0.454

(Task #23 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	3.11	3.47	3.49	2.70	1.75	1	0.245	0.472	0.481	0.517	0.413
2	3.05	2.76	3.90	3.24	2.30	2	0.344	0.504	0.704	0.957	0.562
3	3.49	3.26	4.00	3.15	3.39	3	0.744	1.482	1.270	1.882	1.360
4	4.19	3.57	5.14	5.04	2.38	4	1.051	2.130	1.915	2.553	1.856
5	2.61	10.40	0.11	4.17	0.31	5	0.970	10.400	0.111	2.489	0.148
6	2.56	1.54	1.53	8.13	0.00	6	1.184	0.863	0.686	6.437	0.000
7	0.35	0.40	0.33	0.22	1.00	7	0.156	0.244	0.333	0.222	1.000
8	3.19	2.69	4.41	3.53	2.42	8	0.306	0.427	0.674	0.770	0.666
9	3.60	3.54	5.02	2.84	2.05	9	0.436	0.780	0.940	0.868	0.658
10	3.67	3.17	5.32	3.45	2.08	10	0.487	0.842	1.012	0.993	0.902
11	3.05	3.61	4.16	2.77	1.51	11	0.501	1.247	1.272	0.929	0.598
12	2.53	2.61	2.72	2.77	0.79	12	0.489	0.821	1.004	1.128	0.292
13	3.49	4.68	2.75	2.56	0.79	13	1.082	2.125	2.243	2.070	0.551
14	3.19	5.70	2.02	1.94	1.42	14	0.661	2.094	0.876	0.778	0.932
15	2.89	3.31	2.94	2.12	1.77	15	0.260	0.475	0.480	0.601	0.414
16	3.83	5.84	5.51	3.06	1.71	16	0.601	2.492	1.375	0.811	0.988
17	2.93	4.22	2.84	2.18	1.82	17	0.386	0.998	0.783	0.702	0.591
18	3.36	2.99	4.10	3.78	1.91	18	0.414	0.651	0.815	1.031	0.460
19	3.20	3.33	3.72	2.19	1.03	19	0.530	0.820	0.987	0.872	0.416
20	1.27	2.16	0.54	1.08	1.13	20	0.270	0.837	0.185	0.590	0.512
21	4.48	4.88	6.42	3.20	2.73	21	0.566	1.196	1.350	0.804	0.937
22	3.43	3.04	3.91	4.99	1.94	22	0.440	0.574	0.815	1.694	0.903
23	2.44	2.92	3.15	1.16	0.88	23	0.295	0.544	0.726	0.290	0.186
24	3.72	4.56	3.36	3.84	2.11	24	0.406	0.982	0.644	0.889	0.711
25	3.02	2.85	3.76	2.94	2.29	25	0.282	0.456	0.572	0.646	0.617
26	3.24	5.35	2.83	2.24	0.83	26	0.487	1.375	0.907	0.862	0.350
27	3.44	3.59	4.30	3.11	1.77	27	0.319	0.551	0.681	0.736	0.495
28	2.48	2.74	2.38	2.34	2.12	28	0.409	0.878	0.716	0.755	0.927
29	2.72	6.00	1.67	0.29	0.17	29	0.991	3.569	1.054	0.220	0.121
30	3.15	2.50	4.42	4.31	1.67	30	0.444	0.564	0.934	1.465	0.599
31	3.67	3.96	4.23	3.32	2.43	31	0.415	0.836	0.847	0.800	0.742
32	2.25	4.61	1.60	0.81	1.10	32	0.437	1.446	0.698	0.598	0.632

Outside Task # 24: Cleaning Outdoor Furniture

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	2.98	2.50	4.29	3.52	1.19	1	0.294	0.451	0.654	0.709	0.470
2	1.90	1.58	2.21	3.10	0.39	2	0.455	0.767	0.889	1.338	0.371
3	1.99	1.53	3.15	1.91	1.41	3	0.572	0.726	1.268	1.337	1.405
4	4.23	3.28	8.19	3.48	0.04	4	1.058	1.470	2.514	2.407	0.038
5	3.63	3.19	4.77	4.27	1.86	5	0.479	0.764	1.048	1.093	0.869
6	2.36	1.11	3.45	3.78	1.29	6	0.639	0.375	1.427	1.690	1.267
7	3.86	2.66	7.59	2.81	1.14	7	0.646	0.921	1.522	1.040	0.981
8	2.79	2.61	3.08	4.02	1.19	8	0.428	0.670	0.848	1.292	0.684
9	2.40	3.43	0.20	3.46	1.21	9	0.743	1.758	0.087	2.079	1.209
10	3.60	2.58	5.34	5.76	0.04	10	0.780	0.964	1.513	2.970	0.038
11	2.87	2.48	4.04	3.33	1.34	11	0.319	0.511	0.729	0.727	0.528
12	0.00	0.00	0.00	0.00	0.00	12	0.000	0.000	0.000	0.000	0.000
13	3.20	2.03	5.63	2.65	1.16	13	0.679	0.916	1.378	1.522	1.130
14	3.34	2.85	4.46	4.49	1.44	14	0.378	0.561	0.862	0.983	0.619
15	0.42	0.03	0.07	1.17	0.00	15	0.354	0.034	0.052	1.130	0.000
16	2.84	3.05	3.18	3.74	1.21	16	0.668	1.653	1.448	1.565	0.840
17	2.78	2.22	3.53	3.68	0.77	17	0.509	0.867	1.075	1.104	0.712
18	3.08	2.23	5.25	3.52	0.89	18	0.510	0.671	1.153	1.267	0.777
19	3.28	3.06	4.51	0.20	3.29	19	0.799	0.987	1.752	0.200	2.377
20	3.53	2.82	5.11	4.02	1.91	20	0.579	1.208	1.297	1.236	0.824
21	2.38	1.85	3.74	2.86	0.00	21	0.444	0.586	0.975	1.166	0.000
22	3.14	2.89	4.23	3.70	0.90	22	0.514	0.730	1.185	1.318	0.852

(Task #24 Continued on Following Page)

	101		2					1		3	4
1	2.98	2.50	4.29	3.52	1.19	1	0.294	0.451	0.654	0.709	0.470
2	3.38	2.61	5.02	4.22	2.40	2	0.488	0.612	1.105	1.268	1.322
3	3.64	1.15	9.39	1.20	0.07	3	0.968	0.625	2.341	0.866	0.047
4	3.78	4.46	3.84	4.28	1.79	4	1.100	2.747	1.765	2.873	1.793
5	2.97	0.00	4.33	4.73	1.49	5	1.183	0.000	3.152	2.623	1.485
6	3.69	1.74	6.35	6.63	0.00	6	1.883	1.231	4.169	6.483	0.000
7	0.04	0.00	0.00	0.00	0.50	7	0.055	0.000	0.000	0.000	0.500
8	3.37	2.60	4.96	4.64	1.26	8	0.392	0.526	0.889	1.040	0.686
9	3.59	2.18	6.14	4.62	1.06	9	0.524	0.661	1.185	1.305	0.710
10	3.44	3.10	5.19	2.98	1.56	10	0.532	0.920	1.145	1.047	0.907
11	2.56	1.10	4.30	3.62	1.26	11	0.546	0.717	1.428	1.209	0.736
12	2.37	1.66	4.57	2.90	0.00	12	0.652	0.789	1.773	1.502	0.000
13	1.29	0.49	3.00	2.13	0.38	13	0.697	0.257	2.257	1.996	0.256
14	2.20	3.36	0.37	3.33	1.88	14	0.629	1.689	0.120	2.063	1.300
15	3.10	2.69	4.50	3.36	1.71	15	0.343	0.486	0.759	0.917	0.670
16	2.38	0.13	3.58	3.36	0.00	16	0.551	0.074	1.267	1.057	0.000
17	2.71	2.25	4.37	2.90	1.41	17	0.445	0.805	1.118	0.967	0.623
18	3.49	3.11	4.06	4.50	0.93	18	0.539	0.864	1.014	1.330	0.880
19	2.33	1.82	3.72	3.30	0.24	19	0.535	0.603	1.280	1.690	0.235
20	1.92	2.94	2.08	1.43	0.87	20	0.405	1.181	0.807	0.696	0.600
21	3.50	1.71	6.07	5.65	0.77	21	0.598	0.717	1.547	1.437	0.642
22	3.55	3.12	4.56	3.96	2.39	22	0.581	0.753	1.132	1.911	1.738
23	3.71	2.99	6.79	4.53	0.08	23	0.482	0.651	1.292	1.220	0.041
24	1.95	1.42	2.09	2.53	2.00	24	0.345	0.511	0.606	0.808	0.885
25	3.63	2.80	5.20	4.66	1.88	25	0.383	0.537	0.830	0.976	0.737
26	1.22	1.39	1.82	1.18	0.01	26	0.361	0.780	0.863	0.769	0.011
27	3.18	2.46	4.65	4.64	0.86	27	0.378	0.539	0.863	1.042	0.479
28	3.05	2.97	4.44	2.06	2.25	28	0.551	0.957	1.185	0.909	1.249
29	0.13	0.18	0.19	0.07	0.00	29	0.040	0.083	0.093	0.066	0.000
30	3.26	2.41	5.11	4.54	0.78	30	0.531	0.621	1.197	1.635	0.654
31	3.57	2.52	4.98	5.02	1.94	31	0.530	0.791	1.177	1.280	0.931
32	1.85	2.92	2.38	0.86	0.59	32	0.442	1.238	0.968	0.612	0.553

Outside Task #25: Maintaining Driveways, Walks

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	5.79	3.98	7.25	7.33	6.84	1	0.432	0.621	0.854	1.030	1.086
2	4.30	2.52	6.14	6.82	2.77	2	0.727	0.957	1.581	1.945	1.318
3	5.02	4.78	3.12	7.33	5.62	3	0.984	1.637	1.448	2.604	2.691
4	6.63	3.09	13.91	5.86	6.25	4	1.401	1.555	3.106	3.200	3.448
5	6.76	4.82	7.48	7.93	9.88	5	0.684	1.036	1.276	1.533	1.845
6	8.10	7.85	10.41	7.50	5.22	6	1.206	2.337	2.282	2.490	2.497
7	5.82	3.25	6.85	9.07	6.65	7	0.812	1.079	1.501	2.000	2.283
8	5.47	3.78	7.06	6.93	6.81	8	0.645	0.868	1.335	1.618	1.653
9	3.73	1.66	3.83	3.70	8.42	9	1.072	1.126	2.140	2.271	2.834
10	4.81	0.94	5.67	13.58	14.14	10	1.027	0.626	1.611	4.341	4.682
11	6.04	4.72	7.81	6.79	6.10	11	0.480	0.753	1.010	1.054	1.092
12	0.04	0.00	0.08	0.00	0.00	12	0.037	0.000	0.083	0.000	0.000
13	5.93	2.88	6.17	9.54	11.27	13	0.976	1.209	1.505	2.988	3.133
14	6.49	4.64	9.01	8.42	6.41	14	0.551	0.776	1.216	1.338	1.276
15	1.72	0.01	1.86	2.26	3.47	15	0.802	0.007	1.370	1.580	2.408
16	6.52	4.59	10.39	6.52	5.24	16	1.048	2.108	2.583	2.064	1.662
17	6.62	4.19	7.64	8.08	8.32	17	0.809	1.294	1.560	1.593	2.170
18	5.75	4.41	7.05	7.11	7.29	18	0.724	1.000	1.386	1.930	2.153
19	3.45	2.68	3.98	6.00	6.79	19	0.908	1.075	1.577	5.754	3.733
20	7.64	6.99	9.07	6.34	8.44	20	0.858	1.942	1.673	1.580	1.692
21	4.86	3.92	5.02	7.06	4.41	21	0.676	1.050	1.180	1.776	1.794
22	5.19	2.94	8.22	8.53	6.03	22	0.711	0.773	1.643	2.055	2.032

(Task #25 Continued on Following Page)

	TOT.		2				TOT	1			4
1	5.79	3.98	7.25	7.33	6.84	1	0.432	0.621	0.854	1.030	1.086
2	5.95	4.14	7.59	8.75	8.54	2	0.681	0.847	1.365	1.905	2.340
3	5.28	2.53	4.14	10.82	9.57	3	1.207	1.526	1.671	3.971	3.707
4	8.91	8.43	7.68	10.02	10.47	4	1.759	4.241	2.656	4.343	3.733
5	4.81	0.03	7.00	8.88	1.49	5	1.603	0.033	4.717	3.947	1.485
6	7.99	3.45	14.75	12.00	13.00	6	2.716	2.623	5.778	7.571	13.000
7	0.07	0.20	0.00	0.00	0.00	7	0.055	0.200	0.000	0.000	0.000
8	6.53	4.55	7.86	8.95	9.30	8	0.571	0.756	1.120	1.452	1.752
9	6.39	4.30	6.43	9.14	8.33	9	0.711	1.070	1.232	1.754	1.890
10	7.53	6.12	9.30	7.52	8.19	10	0.808	1.371	1.516	1.689	2.028
11	6.77	5.47	7.06	8.24	6.05	11	0.906	1.875	1.966	1.834	1.589
12	6.17	2.87	9.18	10.26	10.65	12	1.065	1.018	2.478	2.753	3.602
13	3.82	2.37	8.86	3.33	4.08	13	1.309	1.455	4.125	2.512	3.280
14	2.75	0.09	2.41	6.24	5.28	14	0.861	0.042	1.238	3.448	2.045
15	5.21	4.13	6.12	4.97	8.71	15	0.472	0.656	0.885	1.142	1.457
16	7.98	2.24	11.20	10.08	2.67	16	1.006	1.824	2.230	1.764	1.207
17	6.29	4.30	8.25	7.88	5.53	17	0.680	1.203	1.467	1.576	1.184
18	6.46	5.63	6.89	6.22	10.06	18	0.777	1.262	1.355	1.573	2.740
19	3.87	2.16	6.50	7.94	6.18	19	0.784	0.724	1.817	2.843	4.183
20	5.58	5.23	6.18	7.28	2.73	20	0.699	1.602	1.410	1.540	0.986
21	6.96	4.59	8.33	7.42	11.05	21	0.889	1.314	1.822	1.778	2.346
22	5.11	3.45	6.97	7.83	8.41	22	0.751	0.867	1.442	2.450	3.297
23	6.81	5.33	10.54	7.21	6.98	23	0.655	0.889	1.558	1.510	1.652
24	4.68	1.57	4.70	7.53	6.71	24	0.601	0.734	0.990	1.459	1.575
25	6.44	4.81	8.17	6.73	9.17	25	0.535	0.769	1.045	1.192	1.563
26	4.24	1.22	4.91	8.46	3.06	26	0.718	0.770	1.441	1.952	1.210
27	6.39	4.32	8.72	8.16	7.30	27	0.558	0.769	1.174	1.363	1.378
28	5.06	3.27	5.02	6.89	7.06	28	0.755	1.126	1.274	1.763	2.151
29	2.44	2.79	4.02	0.00	1.53	29	1.225	2.734	2.769	0.000	1.529
30	4.43	3.31	3.92	7.00	11.37	30	0.683	0.855	1.092	2.099	3.413
31	7.00	4.40	10.71	7.27	8.12	31	0.758	1.072	1.670	1.586	1.768
32	5.55	4.51	5.06	8.34	3.94	32	0.798	1.660	1.389	1.957	1.371

Outside Task #26: Cleaning Gutters

	TOT.	1	2	3	4
1	1.46	1.12	1.54	1.35	2.80
2	0.71	0.31	0.90	0.71	1.71
3	1.97	1.44	2.15	2.46	2.86
4	0.94	0.44	2.76	0.22	0.09
5	1.86	1.66	1.31	1.59	4.04
6	1.72	2.04	0.71	2.23	1.75
7	1.18	0.98	1.33	0.80	2.72
8	1.27	1.12	2.06	0.75	1.24
9	2.31	0.25	1.41	3.46	6.73
10	0.84	1.14	0.63	0.51	0.07
11	1.60	1.11	1.80	1.46	3.13
12	0.00	0.00	0.00	0.00	0.00
13	0.99	0.95	1.03	0.39	2.03
14	1.85	1.25	2.09	2.00	3.55
15	0.03	0.07	0.00	0.02	0.00
16	2.59	0.83	1.33	1.66	6.51
17	1.08	1.39	1.32	0.66	0.69
18	1.53	1.24	1.75	2.23	1.21
19	0.86	0.72	1.63	0.40	0.08
20	2.02	1.07	1.86	2.12	3.28
21	1.21	1.35	0.64	1.01	2.58
22	1.29	0.97	2.33	0.78	2.08

	TOT.	1	2	3	4
1	0.194	0.220	0.329	0.437	0.694
2	0.264	0.116	0.300	0.666	1.068
3	0.591	0.674	1.080	1.577	1.957
4	0.439	0.087	1.386	0.146	0.054
5	0.317	0.410	0.429	0.664	1.184
6	0.483	0.900	0.163	1.452	1.324
7	0.291	0.245	0.472	0.560	1.467
8	0.259	0.342	0.632	0.470	0.668
9	0.857	0.083	1.266	2.078	2.579
10	0.139	0.316	0.137	0.185	0.043
11	0.232	0.263	0.421	0.489	0.777
12	0.000	0.000	0.000	0.000	0.000
13	0.244	0.325	0.284	0.134	1.336
14	0.279	0.285	0.535	0.679	0.945
15	0.015	0.071	0.000	0.021	0.000
16	0.711	0.313	0.896	1.041	1.802
17	0.244	0.549	0.492	0.421	0.405
18	0.316	0.399	0.573	1.062	0.825
19	0.271	0.095	0.888	0.221	0.05
20	0.431	0.363	0.634	0.929	1.083
21	0.262	0.461	0.095	0.605	1.266
22	0.312	0.287	0.846	0.598	1.221

(Task #26 Continued on Following Page)

	TOT.	1	2				TOT.	1		3	
1	1.46	1.12	1.54	1.35	2.80	1	0.194	0.220	0.329	0.437	0.694
2	1.84	1.24	2.14	2.52	3.92	2	0.335	0.312	0.639	1.004	1.563
3	0.60	0.53	0.87	0.26	0.69	3	0.153	0.154	0.286	0.110	0.620
4	1.33	0.54	2.04	0.23	2.84	4	0.641	0.137	1.229	0.112	2.005
5	1.92	4.33	0.21	2.39	1.57	5	0.962	4.333	0.100	2.256	1.483
6	0.75	0.78	1.12	0.13	0.00	6	0.187	0.185	0.452	0.125	0.000
7	0.56	1.20	0.00	0.26	0.00	7	0.215	0.583	0.000	0.219	0.000
8	1.67	1.13	1.89	2.15	3.13	8	0.255	0.238	0.475	0.717	1.009
9	2.08	1.68	1.33	2.49	4.28	9	0.380	0.539	0.436	0.973	1.330
10	2.15	2.13	1.98	1.83	3.25	10	0.405	0.665	0.682	0.821	1.285
11	1.88	1.74	0.92	1.62	3.45	11	0.473	0.845	0.611	0.832	1.215
12	1.25	0.73	1.73	0.49	5.64	12	0.438	0.145	0.843	0.143	3.090
13	0.57	0.71	1.12	0.13	0.07	13	0.145	0.139	0.622	0.087	0.066
14	0.92	0.47	0.82	0.18	2.37	14	0.408	0.122	0.415	0.103	1.332
15	1.31	1.18	1.43	0.90	2.27	15	0.194	0.237	0.341	0.450	0.749
16	2.05	0.31	1.91	1.95	3.96	16	0.537	0.130	0.882	0.823	1.499
17	1.81	1.59	1.74	1.32	2.89	17	0.351	0.563	0.604	0.642	0.876
18	1.32	1.21	1.13	1.34	2.45	18	0.282	0.378	0.388	0.697	1.275
19	0.91	0.60	1.46	1.62	0.79	19	0.261	0.079	0.654	1.367	0.703
20	1.85	2.03	1.87	0.95	2.98	20	0.408	0.824	0.751	0.571	1.058
21	1.68	0.96	1.36	2.36	3.08	21	0.397	0.444	0.522	0.977	1.275
22	1.06	0.81	1.64	0.35	2.57	22	0.237	0.091	0.556	0.110	1.720
23	1.61	1.18	1.95	2.66	1.35	23	0.277	0.272	0.561	0.972	0.708
24	1.20	0.92	1.29	0.32	3.44	24	0.283	0.397	0.454	0.093	1.153
25	1.85	1.27	2.03	2.01	3.78	25	0.255	0.240	0.446	0.654	0.994
26	0.45	0.60	0.18	0.03	1.17	26	0.232	0.535	0.069	0.022	0.821
27	1.54	0.69	1.84	2.09	3.36	27	0.254	0.077	0.444	0.705	0.954
28	1.47	2.26	1.23	0.18	1.99	28	0.344	0.793	0.564	0.048	1.097
29	0.51	0.95	0.13	0.01	0.76	29	0.232	0.642	0.091	0.008	0.704
30	1.28	0.98	1.65	2.09	0.73	30	0.276	0.279	0.567	1.147	0.429
31	1.63	0.93	1.59	1.88	3.36	31	0.342	0.331	0.531	0.794	1.147
32	1.46	1.92	0.95	0.12	3.21	32	0.395	0.782	0.514	0.047	1.259

Outside Task #27: Maintaining Shrubs, Flowers, Etc.

	TOT.	1	2	3	4
1	12.35	15.47	13.16	10.15	3.27
2	7.80	9.20	10.58	6.28	0.80
3	13.13	20.67	11.07	4.40	1.49
4	14.99	17.71	18.38	11.73	0.15
5	13.98	16.36	13.95	13.78	6.08
6	9.39	9.72	14.58	6.27	4.24
7	15.51	18.40	16.99	13.69	2.42
8	13.03	17.26	11.77	9.58	3.85
9	6.07	7.46	4.51	8.58	1.73
10	15.28	16.90	13.54	20.36	2.50
11	11.81	15.11	13.18	9.11	3.39
12	1.38	0.00	3.25	0.00	0.00
13	12.68	13.83	12.95	15.18	3.05
14	13.97	17.10	15.32	11.58	3.48
15	2.46	2.76	3.74	1.15	2.83
16	7.62	11.97	10.70	5.60	3.19
17	10.84	13.45	11.04	10.40	3.21
18	13.96	15.27	15.79	13.06	2.75
19	16.86	19.59	13.21	15.93	5.28
20	10.69	15.04	14.09	9.09	3.44
21	13.76	15.97	13.43	13.16	4.06
22	12.55	15.46	12.25	8.34	2.25

	TOT.	1	2	3	4
1	0.515	0.992	0.977	1.092	0.737
2	0.862	1.705	1.868	1.770	0.472
3	1.288	2.567	2.260	1.970	1.405
4	1.577	2.786	3.025	3.585	0.153
5	0.793	1.501	1.453	1.750	1.464
6	1.191	2.289	2.623	1.810	2.143
7	1.083	2.094	1.930	2.215	1.412
8	0.769	1.421	1.377	1.767	1.193
9	1.084	2.332	1.877	2.986	1.265
10	1.370	2.342	2.179	4.012	2.032
11	0.556	1.094	1.105	1.125	0.797
12	1.324	0.000	2.926	0.000	0.000
13	1.115	2.228	1.814	2.728	1.658
14	0.657	1.176	1.312	1.467	0.926
15	0.880	1.973	2.090	1.106	1.974
16	1.013	3.086	2.424	1.755	1.305
17	0.874	1.855	1.644	1.693	1.338
18	0.904	1.519	1.674	2.221	1.203
19	1.496	2.226	2.417	6.658	3.164
20	0.864	2.342	1.800	1.713	1.021
21	0.961	1.742	1.638	2.229	1.786
22	0.859	1.428	1.682	1.759	1.258

(Task #27 Continued on Following Page)

	TOT.	1	2	3	4		TOT.	1	2	3	4
1	12.35	15.47	13.16	10.15	3.27	1	0.515	0.992	0.977	1.092	0.737
2	16.24	17.36	16.28	17.43	4.40	2	0.876	1.363	1.615	2.244	1.651
3	14.54	16.14	15.51	16.63	2.79	3	1.599	3.131	2.680	4.143	2.045
4	13.30	19.56	14.43	9.74	4.07	4	1.764	4.606	3.003	3.517	2.500
5	4.83	0.50	7.44	6.00	3.61	5	1.532	0.341	3.926	3.260	2.104
6	14.89	18.03	13.27	9.14	0.00	6	3.297	5.481	5.442	7.340	0.000
7	10.95	13.63	18.24	9.04	0.00	7	4.625	12.798	16.882	5.789	0.000
8	14.46	15.77	15.19	14.27	5.91	8	0.680	1.126	1.283	1.601	1.387
9	11.97	13.65	12.47	13.31	2.96	9	0.801	1.552	1.435	1.931	1.089
10	13.57	15.58	15.83	12.25	4.20	10	0.903	1.772	1.685	1.891	1.397
11	8.60	10.61	10.35	8.32	4.43	11	0.898	2.059	2.047	1.735	1.382
12	13.44	15.81	15.61	7.85	6.54	12	1.294	2.117	2.647	2.426	3.169
13	13.97	19.39	10.76	8.44	6.00	13	1.985	3.689	3.799	3.379	4.000
14	8.00	13.03	9.42	3.72	0.74	14	1.130	3.051	2.195	2.050	0.498
15	13.72	15.94	13.64	12.77	4.33	15	0.607	1.038	1.102	1.574	1.010
16	7.43	9.62	11.54	6.93	0.89	16	0.910	3.219	2.103	1.439	0.697
17	8.97	9.97	13.16	9.01	2.71	17	0.703	1.524	1.611	1.508	0.830
18	14.37	18.85	13.57	10.51	3.72	18	0.923	1.746	1.603	1.852	1.570
19	15.61	17.15	13.02	14.41	6.88	19	1.229	1.778	2.095	3.450	4.419
20	7.85	8.04	8.76	10.05	2.82	20	0.757	1.709	1.537	1.631	1.034
21	11.42	14.52	14.92	7.85	3.35	21	0.924	1.868	2.003	1.676	1.223
22	16.71	18.90	14.59	16.24	3.82	22	1.051	1.654	1.648	3.218	2.298
23	15.33	18.55	15.45	11.89	4.70	23	0.779	1.300	1.551	1.710	1.352
24	8.75	9.81	11.30	8.33	1.49	24	0.704	1.546	1.363	1.437	0.684
25	14.63	17.30	15.70	12.18	4.82	25	0.636	1.142	1.176	1.398	1.101
26	5.84	8.13	5.77	6.00	0.64	26	0.760	1.816	1.530	1.629	0.592
27	13.50	17.16	14.19	10.66	2.71	27	0.655	1.217	1.258	1.435	0.830
28	11.04	12.61	12.81	10.29	3.08	28	0.930	1.875	1.763	1.898	1.321
29	5.94	6.57	5.46	3.07	9.00	29	1.600	2.986	2.697	1.850	4.670
30	14.24	17.05	11.53	11.80	3.57	30	0.951	1.558	1.518	2.413	1.907
31	12.62	14.60	15.92	10.94	3.98	31	0.827	1.579	1.718	1.691	1.198
32	9.10	11.96	11.45	8.09	2.54	32	0.921	2.237	1.939	1.824	1.116

APPENDIX C

APPENDIX C (1)

FACTOR ANALYSIS SEGMENTATION

It has been noted in a prior section of this report under Questionnaire Development that a set of 56 item statements was assembled for use in conjunction with the structured study questionnaire. These statements were intended to embrace a broad spectrum of householders' attitudes and perceptions with respect to cleaning and maintenance of their houses. Suitable analysis of householders' responses to the statements was expected to yield a small number of "factor analysis segments." Each segment is characterized by an overall pattern of attitudes that differs from the analogous pattern for every other segment.

Procedures for collection and subsequent factor analysis of data from the statements were these:

The selected statements were transcribed onto small cards, one statement to a card, and made up into decks. Respondents made forced distributions of the cards with respect to how strongly they agreed or disagreed with each statement.

APPENDIX C (2)

The quasi-normal forced distribution sort of the cards has the great virtue of eliminating the singularity of the segmenting modes, because the householder must rank each statement dynamically within the context of all the statements. Moreover, no problems associated with a numerical scoring of the statements confront the householder.

The sorting procedure consisted of two steps. In the first run-through, the respondent sorted the cards into three groups--agree, disagree, neutral--with no restrictions as to the number of cards to be placed in each group. In the second step, using a sorting board, the respondent broke the statements into nine categories--agree most down to disagree most--adhering to the forced distribution pattern.

Processing of the card sort data was accomplished through an elaborate and highly flexible set of programs developed by us for use with the UNIVAC 1108.

The data were keypunched, transposed, mapped, and edited in standard fashion for computer use. Our programming enables computation and factor extraction by the principal axis method for a 198 x 198 matrix.

In our so-called "Q"-methodology for the factor-segmenting of people, it is necessary to compute the correlation between people across the statements rather than correlation between statements across the people as in R-methodology. Consequently, where--as here--samples of respondents larger than 198 make the card sorts, we resort to a combination of R and Q procedures, supplemented by computation of multiple regression equations.

The major specific steps employed are these:

- Computation of the R-mode correlation matrix for statements across all respondents in the sample.
- Extraction and varimax rotation of the optimum number of factors from the R-mode matrix. Optimum is generally defined as the number of factors which accumulate all the accountable variance in the matrix. In this study, we found 11 R-factors.
- Computation of the factorial scores for each respondent for each of the rotated R-mode factors and selection of 198 respondents on the criterion of the highest scores for each end of the R-factor axes.
- Computation of a 198 x 198 Q-mode correlation matrix for these respondents across all the statements.

- Extraction and varimax rotation of as few factors as are required to account for at least 85% of the accountable variance in the matrix. Six Q-factors satisfied the criterion in this instance.

- Computation of regression equations for these selected factors to predict loadings for all others in the sample who were not included in the 200 actually factor-analyzed.

The relative magnitudes and the signs of the beta coefficients for each statement in the multiple regression equation for each Q-factor affords us the opportunity to plot a statement profile for each factor. From this profile, we can deduce some convenient semantic handles for referring to the factor segments and come to understand the primary differentiating characteristics among the segments.

Profiles of the six Q-factor segments identified in their study are shown on the last six pages of this section.

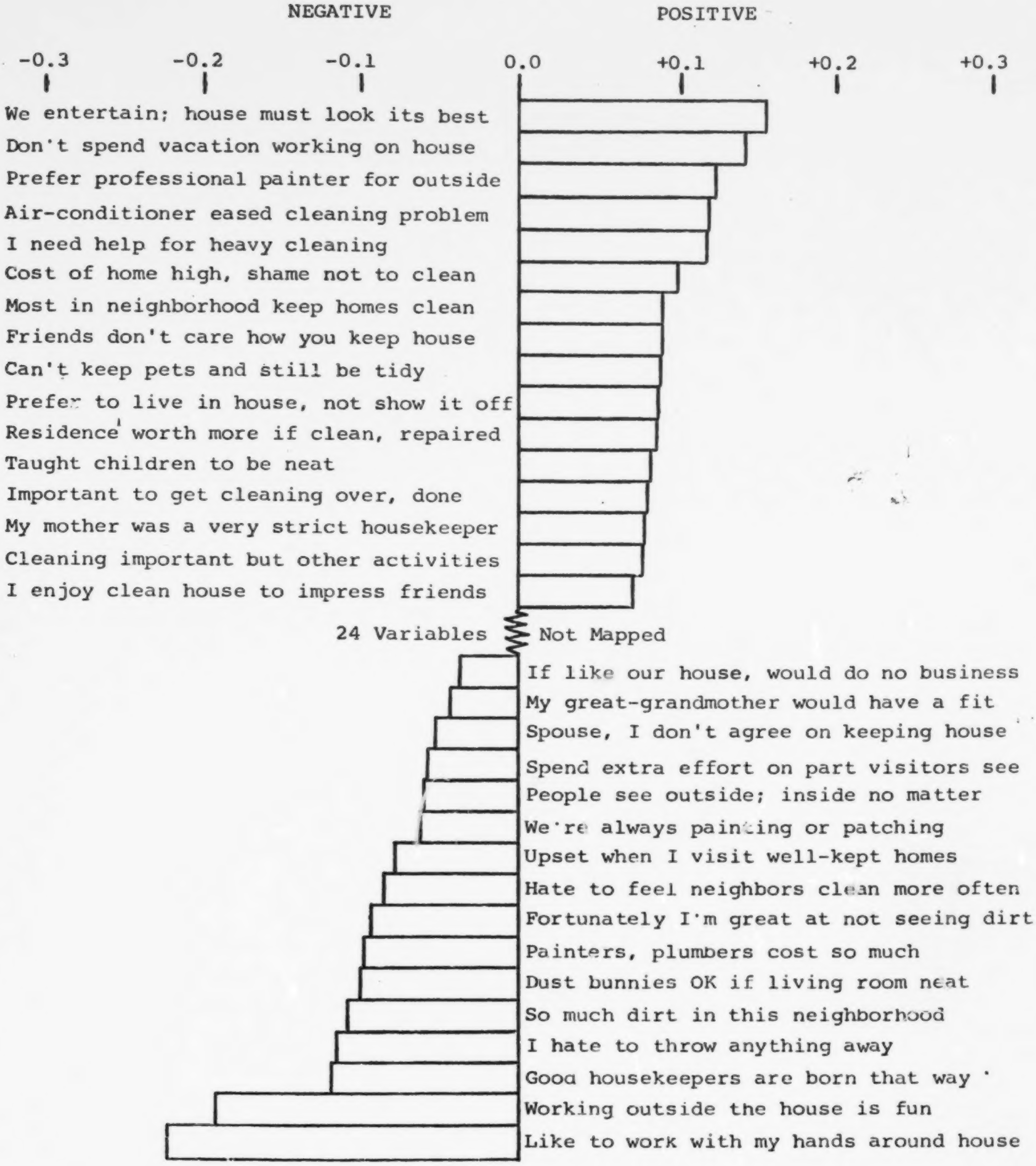
Any factor loading equal to or greater than 0.40 is considered to be "highly significant" and a loading equal to a greater than 0.25 is regarded or "significant."

Any or all such loadings for each respondent determined his or her segment assignment(s) and were punched into the master card for that household. (Where, as was the case for a small percentage of the households, segment assignments differed between husband and wife in the same household, that respondent having the highest loading was used for the household.)

Distribution of segment assignments by zone is shown in Chapter VI.

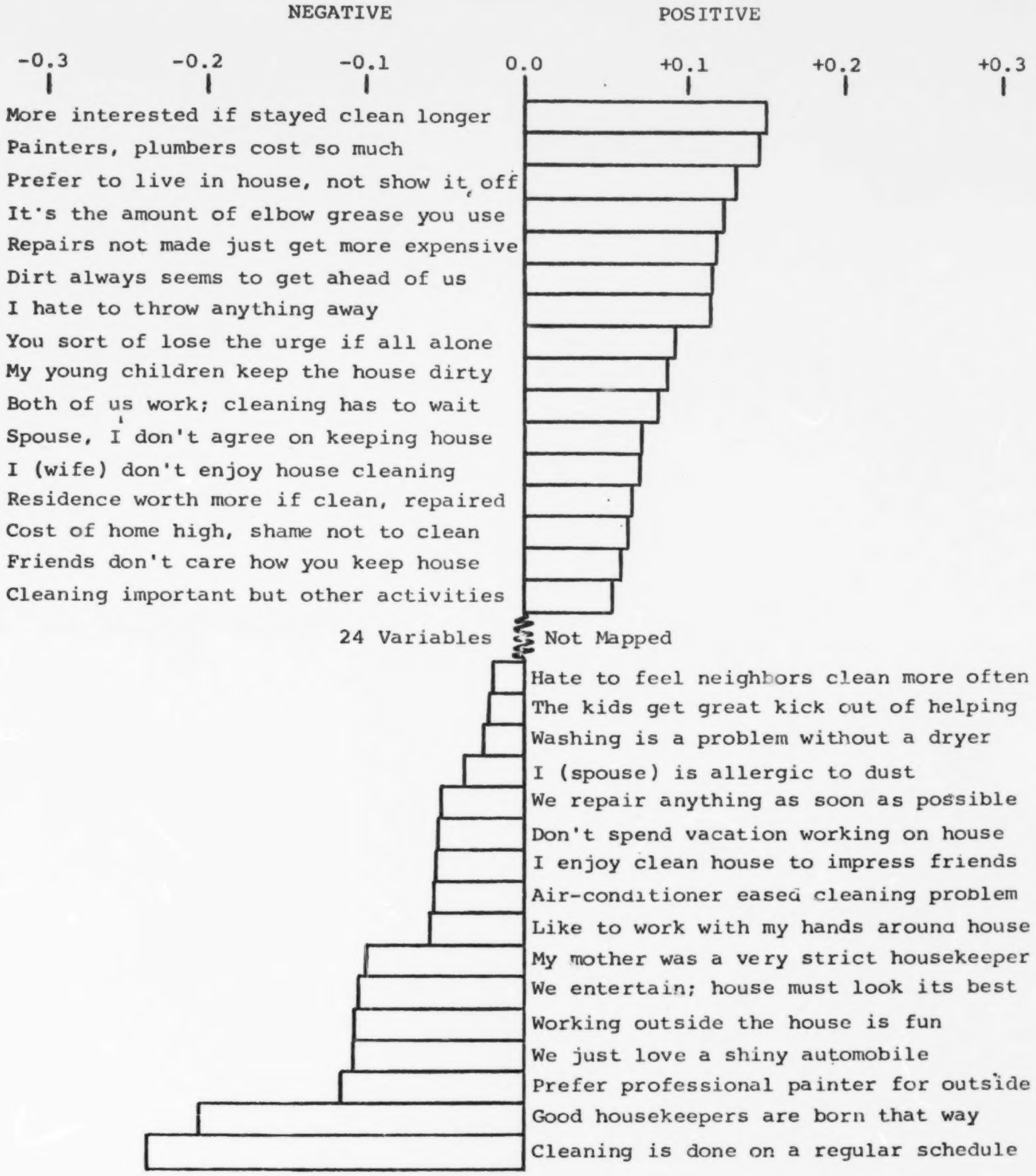
FACTOR SEGMENT 1 "SOCIAL"

Profile of Beta Weights



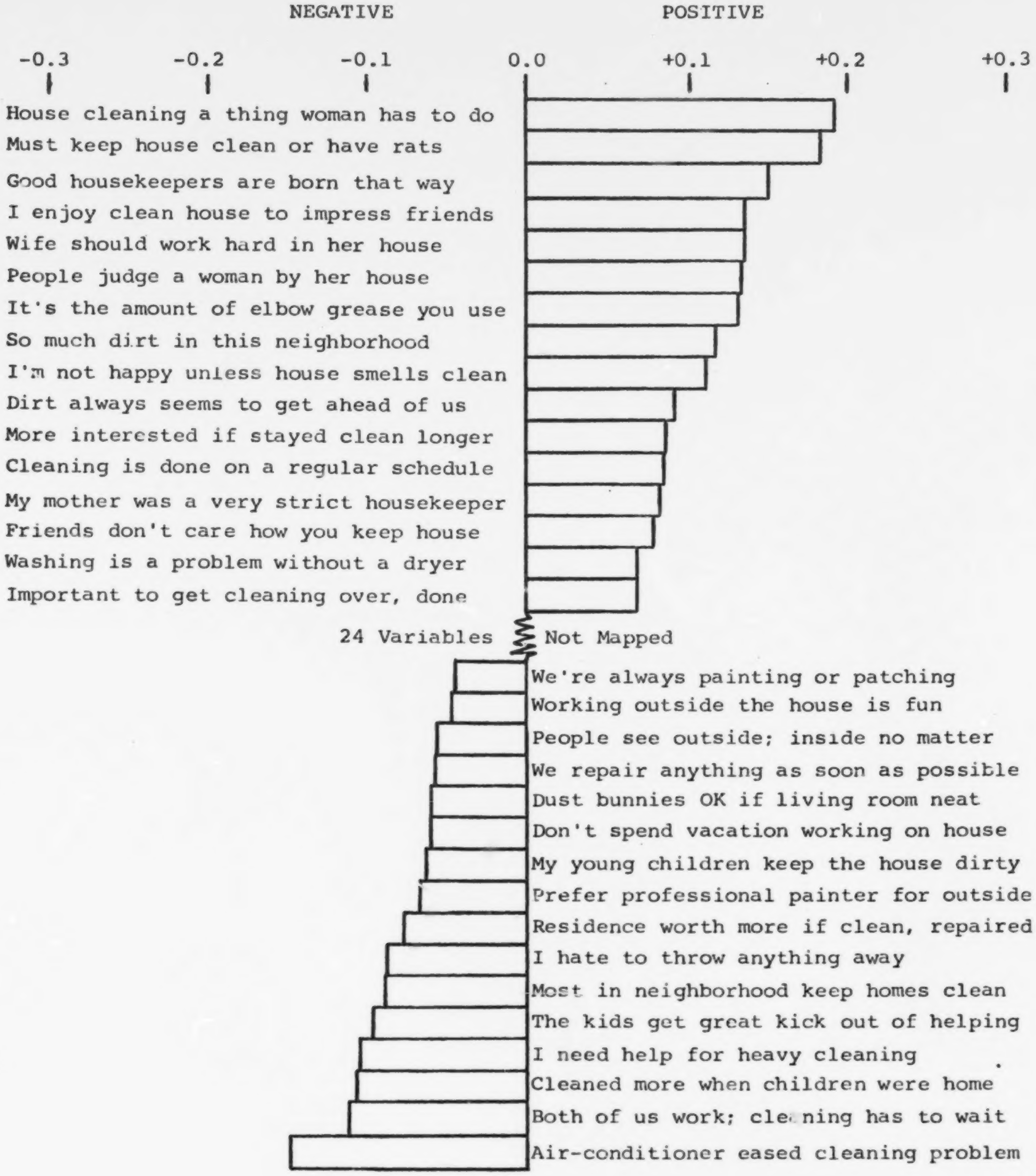
FACTOR SEGMENT 2 "HIT-OR-MISS"

Profile of Beta Weights



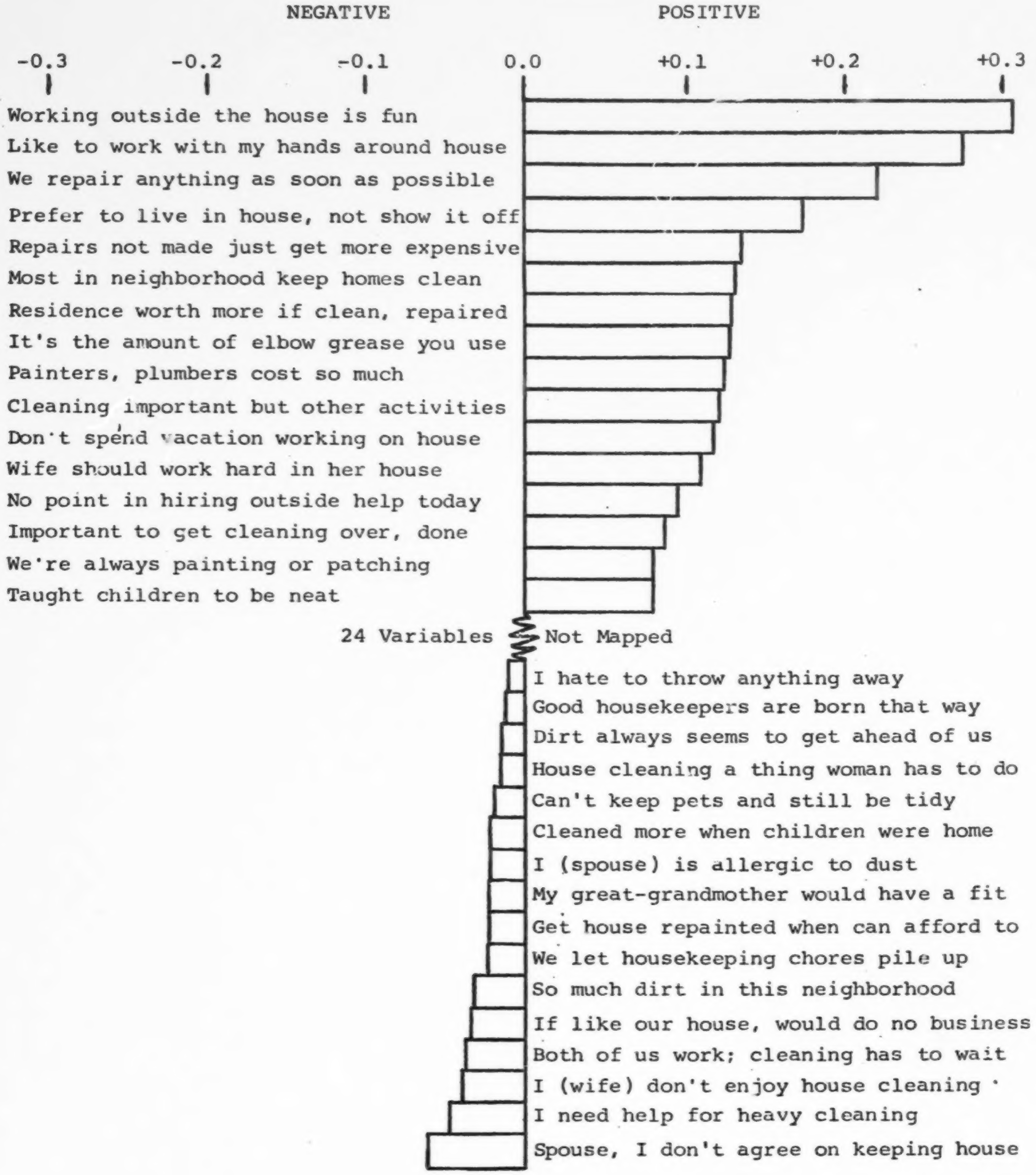
FACTOR SEGMENT 3 "PROUD"

Profile of Beta Weights



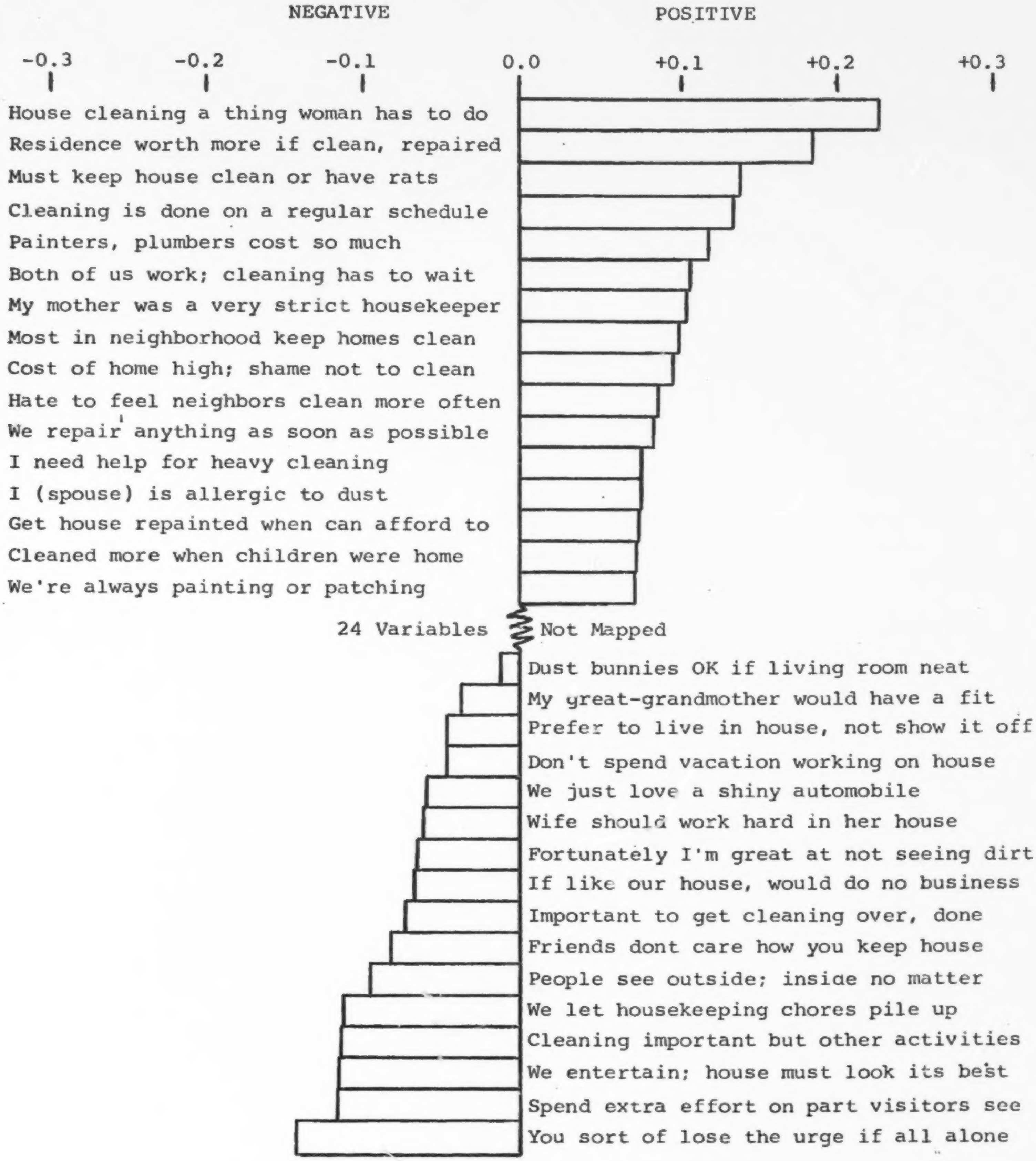
FACTOR SEGMENT 4 "DO-IT-YOURSELF"

Profile of Beta Weights



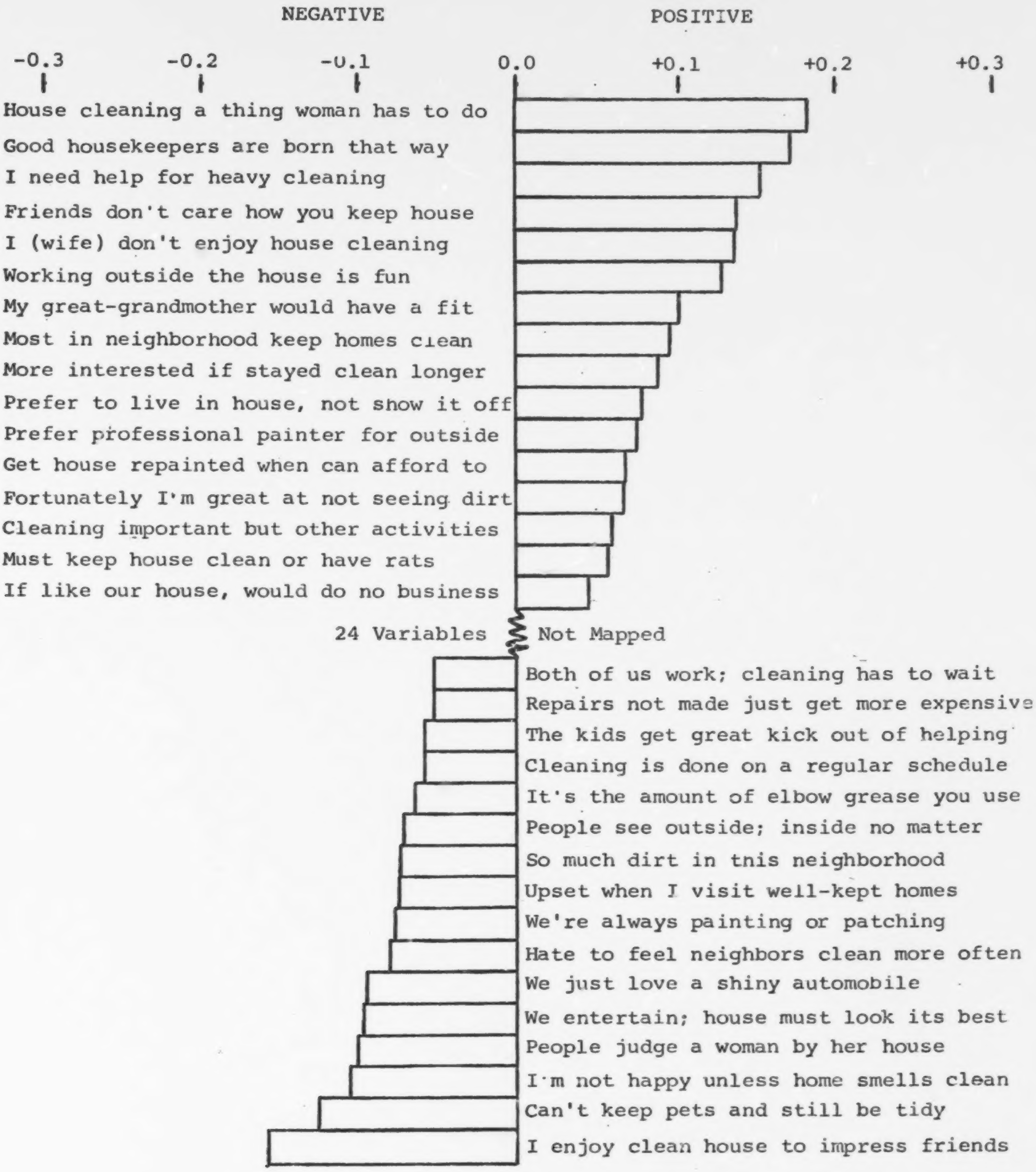
FACTOR SEGMENT 5 "DUTIFUL"

Profile of Beta Weights



FACTOR SEGMENT 6 "DISINTERESTED"

Profile of Beta Weights


NEGATIVE
POSITIVE
-0.3
-0.2
-0.1
0.0
+0.1
+0.2
+0.3
House cleaning a thing woman has to do
Good housekeepers are born that way
I need help for heavy cleaning
Friends don't care how you keep house
I (wife) don't enjoy house cleaning
Working outside the house is fun
My great-grandmother would have a fit
Most in neighborhood keep homes clean
More interested if stayed clean longer
Prefer to live in house, not show it off
Prefer professional painter for outside
Get house repainted when can afford to
Fortunately I'm great at not seeing dirt
Cleaning important but other activities
Must keep house clean or have rats
If like our house, would do no business
24 Variables
Not Mapped
Both of us work; cleaning has to wait
Repairs not made just get more expensive
The kids get great kick out of helping
Cleaning is done on a regular schedule
It's the amount of elbow grease you use
People see outside; inside no matter
So much dirt in this neighborhood
Upset when I visit well-kept homes
We're always painting or patching
Hate to feel neighbors clean more often
We just love a shiny automobile
We entertain; house must look its best
People judge a woman by her house
I'm not happy unless home smells clean
Can't keep pets and still be tidy
I enjoy clean house to impress friends